

BANKING AND FINANCIAL SERVICES I

THE NEXT DECADE, 1985 - 1995

VOLUME II

MARKET OPPORTUNITIES IN WHOLESALE BANKING

INPUT



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BANKING AND FINANCIAL SERVICES:  
THE NEXT DECADE, 1985-1995  
VOLUME II  
MARKET OPPORTUNITIES IN  
WHOLESALE BANKING

SEPTEMBER 1986

Published by  
INPUT  
1943 Landings Drive  
Mountain View, CA 94043  
U.S.A.

***Banking and Financial Services:  
The Next Decade, 1985-1995  
Volume II  
Market Opportunities in Wholesale Banking***

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**BANKING AND FINANCIAL SERVICES:  
THE NEXT DECADE, 1985-1995  
VOLUME II  
MARKET OPPORTUNITIES IN WHOLESALE BANKING**

**ABSTRACT**

This complete report consists of three volumes. This volume (Volume II) analyzes the market opportunities in wholesale banks by type and functional areas.

The primary emphasis is on wholesale; functional areas include corporate, corporate trust, business services, and international. The types of banks analyzed are money center, regional, large independent, and independent.

Volume I analyzes the strategic direction of the banking and finance industry and the impact of technology, security, and distributed data processing on the industry as a whole and the information services segment in particular. A ten-year forecast is also included.

Volume III analyzes the information systems requirements and market opportunities in the overall commercial banking environment by size (small, medium, large, and very large) and functional area with the emphasis on the retail bank.

This report contains 228 pages, including 94 exhibits.



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## I INTRODUCTION





## I INTRODUCTION

### A. OBJECTIVE

- The objective of this three volume, multiclient study is to identify new and emerging information services product and services opportunities, primarily for banks but also for other financial institutions and for vendors in related financial information services markets, including hardware, software, telecommunications, data base services, turnkey systems, and processing/network services.
- The study will attempt to qualify these opportunities and provide marketing and strategic insight on successfully entering and expanding in the corporate financial information services market.

### B. SCOPE

- The study focuses on U.S. market opportunities. By the U.S. market, it is meant U.S. corporations (including multinational) operating in the U.S. through U.S. banks and other financial institutions and, to a limited extent, foreign banks and other financial institutions' U.S. operations.

- The market is based on expenditures from corporate, bank, and other financial institution users derived through U.S. operations only. The study does not include markets in Canada, Mexico, Japan, and Western Europe.
- The final report has been divided into three volumes. This volume, Volume II, Market Opportunities in Wholesale Banking, provides a detailed analysis of the information products and services necessary to support corporate relationship banking from the viewpoint of money center, regional, large independent, and independent banks as well as multinational, national, and "middle-America" U.S. corporations.
- Volume I, previously published and entitled Strategic Analysis: The Next Decade, includes the strategic analysis of the banking and other large financial institutions marketplace over the next decade with respect to changing market structure; government regulation (deregulation); money center, regional, and large independent banks; and, to a limited extent, U.S. federal institutions (i.e., the FRB and FDIC). The analysis considers the impacted technology from hardware, software, turnkey systems, data bases, information services, and telecommunications sectors, including technology such as fibre optics, digital voice, and voice/response, and financial systems innovations such as check truncation, EFTS, consumer information services (home banking and investment), etc. The analysis gives special attention to information security, distributed processing, and international (multinational) corporate banking.
- Volume III, Information Systems Requirements Analysis in Commercial Banking, presents a requirements analysis from data gathered through interviewing both commercial banks and corporate end users for the retail, wholesale, trust, administration, business services, international, and bank card service operations of small, medium, large, and very large banks.
- A detailed economic forecast of user expenditures for the commercial banking sector for the 1986-1991 timeframe by bank size and current dollars is provided in this volume. Detailed modes covered are:

- Processing/network services.
  - Professional services.
  - Turnkey systems.
  - Applications software.
- The forecast also covers the functional operations of commercial banks.

### C. METHODOLOGY

- The data and analysis gathered for this volume consists of over 300 interviews conducted from the period August 1985 through July 1986. The interview profile is shown in Exhibit I-1.
- The data in Volume II was derived from an extensive interview program with planning, marketing, and MIS/DP executives in commercial banks; corporate executives (particularly financial) from an electronic information search; and INPUT's extensive library of data and information on the banking and financial services industry.
  - The banking executive interview profile according to bank type is shown in Exhibit I-2.
  - The corporate executive interview profile by market sector is shown in Exhibit I-3.
  - The detailed breakdown of the types of bank marketing/planning executives interviewed is shown in Exhibit I-4.

**EXHIBIT I-1**

**EXECUTIVE INTERVIEW PROFILE BY BANK SIZE**

<b>BANK TYPE</b>	<b>DEPOSIT RANGE</b>	<b>NUMBER INTERVIEWED</b>		<b>TOTALS</b>
		<b>MIS/DP</b>	<b>Marketing/ Planning</b>	
<b>Very Large</b>	<b>&gt; \$1 B</b>	<b>67</b>	<b>59</b>	<b>126</b>
<b>Large</b>	<b>\$500 M - \$1 B</b>	<b>6</b>	<b>13</b>	<b>19</b>
<b>Medium</b>	<b>\$100 - \$500 M</b>	<b>12</b>	<b>25</b>	<b>37</b>
<b>Small</b>	<b>&lt;\$100 M</b>	<b>4</b>	<b>7</b>	<b>11</b>
<b>Total</b>	<b>&lt;\$100 M - &gt;\$1 B</b>	<b>89</b>	<b>104</b>	<b>193</b>



**EXHIBIT I-2**

**BANKING EXECUTIVE INTERVIEW PROFILE BY BANK TYPE**

<b>BANK TYPE</b>	<b>DEPOSIT RANGE</b>	<b>NUMBER INTERVIEWED</b>		<b>TOTALS</b>
		<b>MIS/DP</b>	<b>Marketing/ Planning</b>	
<b>Money Center</b>	<b>&gt;\$20.0 B</b>	<b>5</b>	<b>5</b>	<b>10</b>
<b>Regional</b>	<b>\$2.0-\$19.9B</b>	<b>48</b>	<b>42</b>	<b>90</b>
<b>Large Independent</b>	<b>\$600M-\$1.9 B</b>	<b>19</b>	<b>26</b>	<b>45</b>
<b>Independent</b>	<b>&lt;\$600 M</b>	<b>17</b>	<b>31</b>	<b>48</b>
<b>Total</b>		<b>89</b>	<b>104</b>	<b>193</b>

**EXHIBIT I-3**

**CORPORATE EXECUTIVE INTERVIEW PROFILE  
BY MARKET SECTOR**

<b>MARKET SERVICE</b>	<b>NUMBER INTERVIEWED</b>	<b>DISTRIBUTION</b>			
		<b>Cash Manager</b>	<b>Treasurer</b>	<b>Asst. Treasurer</b>	<b>Other</b>
<b>Retail</b>	<b>12</b>	<b>3</b>	<b>6</b>	<b>2</b>	<b>1</b>
<b>Utilities</b>	<b>13</b>	<b>4</b>	<b>4</b>	<b>2</b>	<b>3</b>
<b>Manufacturing</b>	<b>23</b>	<b>9</b>	<b>5</b>	<b>4</b>	<b>5</b>
<b>Other</b>	<b>26</b>	<b>7</b>	<b>8</b>	<b>5</b>	<b>6</b>
<b>Totals</b>	<b>74</b>	<b>23</b>	<b>23</b>	<b>13</b>	<b>15</b>

**EXHIBIT I-4**

**MARKET/PLANNING EXECUTIVE INTERVIEW PROFILE  
BY BANK TYPE**

<b>BANK SIZE</b>	<b>NUMBER OF INTERVIEWS</b>	<b>DISTRIBUTION</b>				
		<b>Sr. VP Vp Mkt.</b>	<b>Asst. VP/ Dir. Mkt.</b>	<b>VP/Dir.</b>	<b>Chief Ex. Officer Sr. VP Asst. VP</b>	<b>Other</b>
<b>Very Large</b>	<b>5</b>	<b>-</b>	<b>1</b>	<b>3</b>	<b>1</b>	<b>-</b>
<b>Large</b>	<b>42</b>	<b>14</b>	<b>8</b>	<b>8</b>	<b>7</b>	<b>5</b>
<b>Medium</b>	<b>26</b>	<b>10</b>	<b>5</b>	<b>4</b>	<b>6</b>	<b>1</b>
<b>Small</b>	<b>31</b>	<b>6</b>	<b>7</b>	<b>6</b>	<b>4</b>	<b>8</b>
<b>Total</b>	<b>104</b>	<b>30</b>	<b>21</b>	<b>21</b>	<b>18</b>	<b>14</b>

- The types of MIS/DP executives interviewed by banking type are shown in Exhibit I-5.
- All forecasts in this report are in current dollars. Inflation assumptions for the forecast are:
  - 1986 - 3%.
  - 1987 - 4%.
  - 1988 - 5%.
  - 1989-1991 - 6%.
- Each mode of service has a different factor as a proportion of the annual inflation rate dependent on labor content.
  - Processing/network services - 70%.
  - Professional services - 100%.
  - Software products - 80%.
  - Turnkey systems - 40%.
- Definitions used throughout the report are contained in Appendix A.
- Related INPUT reports are as shown in Appendix B.
- The corporate financial and vendor questionnaires which formed the basis of the primary research are shown in Appendix C. They are:



**EXHIBIT I-5**

**MIS/DP EXECUTIVE INTERVIEW PROFILE  
BY BANK TYPE**

<b>BANK SIZE</b>	<b>NUMBER OF INTERVIEWS</b>	<b>DISTRIBUTION</b>					
		<b>Sr./VP MIS/DP</b>	<b>Asst. VP/ MIS/DP</b>	<b>Mgr./Dir. MIS/DP</b>	<b>VP OPS</b>	<b>Mgr. Sys/Prog.</b>	<b>Other</b>
<b>Money Center</b>	<b>5</b>	<b>-</b>	<b>2</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>-</b>
<b>Regional</b>	<b>48</b>	<b>19</b>	<b>12</b>	<b>4</b>	<b>5</b>	<b>1</b>	<b>7</b>
<b>Lg. Independent</b>	<b>19</b>	<b>12</b>	<b>2</b>	<b>3</b>	<b>2</b>	<b>-</b>	<b>-</b>
<b>Independent</b>	<b>17</b>	<b>6</b>	<b>4</b>	<b>1</b>	<b>-</b>	<b>-</b>	<b>6</b>
<b>Total</b>	<b>89</b>	<b>37</b>	<b>20</b>	<b>8</b>	<b>7</b>	<b>4</b>	<b>13</b>

- Bank MIS/DP Executive Questionnaire.
  - Bank Marketing/Planning Executive Questionnaire.
  - Corporate Financial Executive Questionnaire.
  - Vendor Questionnaire.
- As always, questions and comments from the subscribers to this study are welcomed by INPUT.

## II EXECUTIVE SUMMARY



## II EXECUTIVE SUMMARY

- This Executive Summary is designed to be a summary of Volume II in order to help the busy reader quickly review key research findings.
- Key points of this volume are summarized in Exhibits II-1 through II-7.

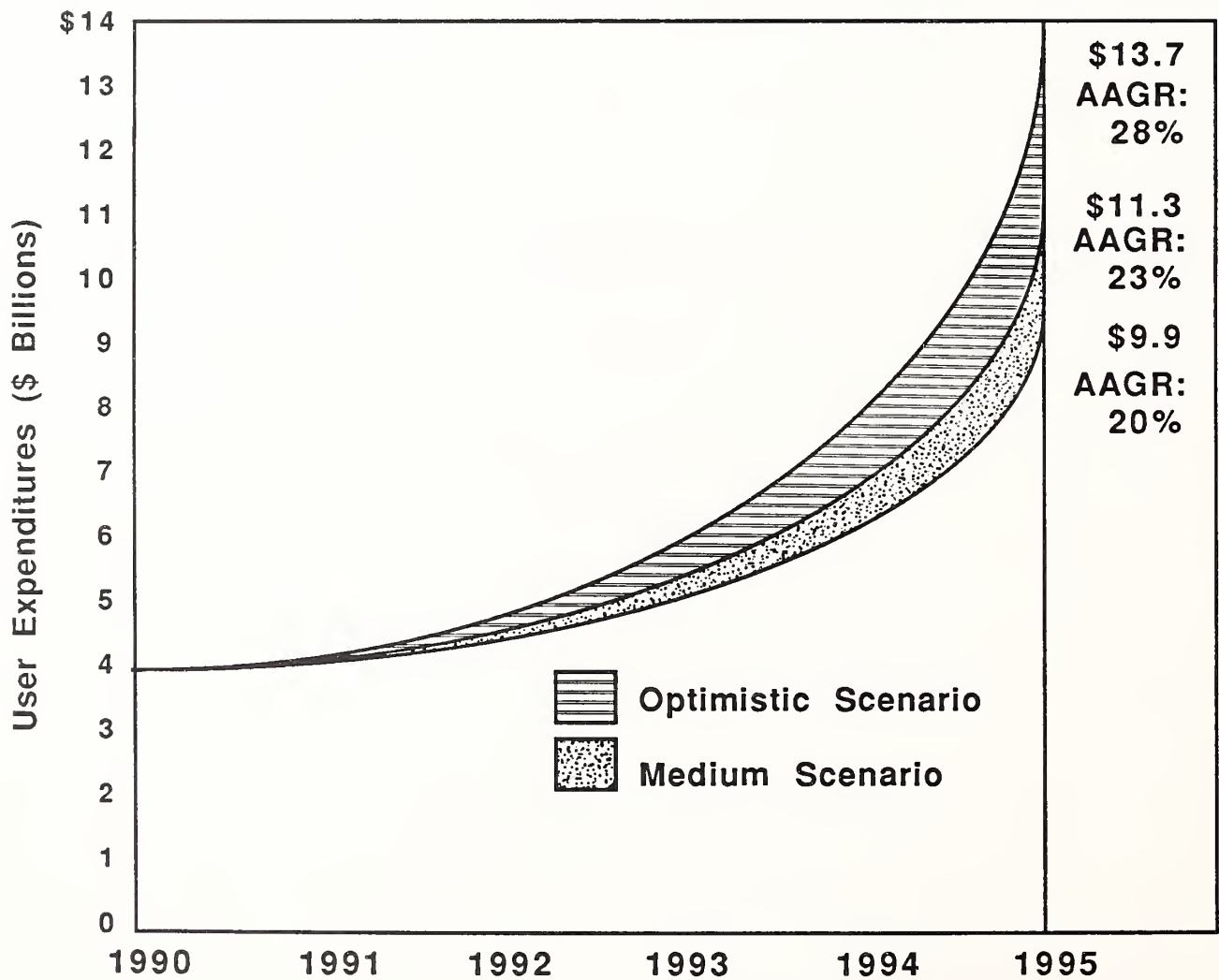
### A. WHOLESALE BANKING FINANCIAL INFORMATION SERVICES - A \$14 BILLION MARKET BY 1995

- Sizable industry-specific information services opportunities exist for virtually all market segments and modes of delivery. As shown in Exhibit II-1, the minimum forecast is nearly \$14 billion in 1995.
- For the 1986-1991 period, the market will grow from \$1.4 billion to \$4.0 billion, an 18% average annual growth.
- Corporate banking services will, by 1991, still remain larger than the other three market segments--international banking, corporate trust, and automated business services--comprising over 50% of total expenditures.
- The top 300 banks (money center, regional, and large independent), comprising over 60% of total current expenditures while less than 2% of all commercial banks, will continue to dominate the wholesale banking segment.



EXHIBIT II-1

WHOLESALE BANKING FINANCIAL INFORMATION SERVICES  
A \$14 BILLION MARKET BY 1995



- The top 100 money center and regional banks, which comprise well over 50% of total expenditures, are the best targets of opportunity.
- The top 100 banks and bank holding companies are excellent targets for strategic partnering arrangements.
- Not to be overlooked is the opportunity for professional services. By 1991, professional services, heavily utilized for implementation services, will approach \$900 million, growing at a 19% annual rate.

## **B. WHOLESALE BANKING—THE DYNAMICS OF CHANGE**

- Exhibit 11-2 highlights some of the dynamics that are forcing the restructuring of the wholesale banking market segment.
- Wholesale banking is no longer accomplished through brick and mortar operations, but through multiple electronic networks, which themselves through interfacing and standardization activities are in one direction being extended to commercial and consumer end points (i.e., treasury workstations, ATM, POS) and in the other direction extended and interfaced worldwide.
  - AT&T and other telecommunications companies, currently offering integrated data services network (IDSN) services regionally, will by 1991 integrate such services worldwide.
  - Citicorp currently has direct telecommunications capability 24 hours per day, seven days a week, in over 160 cities spanning 90 countries.
  - In critical high-value transactions electronics is becoming and will continue to be more cost-effective than paper.

## **EXHIBIT II-2**

### **THE DYNAMICS OF CHANGE DRIVING WHOLESALE BANKING**

- **The world is becoming wired for information.**
- **Financial transactions are becoming increasingly time-valued.**
- **Corporate customers are being viewed from all angles.**
- **The clock never stops.**
- **Banks are becoming merchants selling financial goods and services.**

- Financial transaction networks and associated software, including processing and interface software, is an ever-expanding market opportunity.
- Money per se (i.e., interest rate over time) has always been time-valued in financial markets. Formerly, one dealt in terms of years and months. The volume and amount (\$ millions to \$ billions) is increasingly shifting to the time domain of days and, most recently, hours (i.e., float and "daylight overdraft").
  - Corporate domestic and increasingly international funds transfer is being cleared daily.
  - Corporate trade payments, both national and international, are becoming time-valued.
  - Interest rates on credit cards are becoming variable. The "grace period" for payment in full is being replaced by finance charges based on average daily balances.
  - The accelerated pace of financial transactions generates numerous opportunities for financial information services systems, software, and services.
- The wholesale banking marketplace is shifting to the cost side of the delivery equation. To properly focus on cost, both commercial bank and corporate financial community planners must view the corporate customer and his needs in totality.
  - Advanced technology, including relational DBMS systems, permit cost-effective development of "customer-relationship" banking.
  - Corporate treasurers are looking for integrated fund/cash management solutions which give them control over the entire cash flow timeline.

- International financial markets have evolved to the extent that order entry and execution is becoming possible for a wide range of financial instruments traded in London, New York, and, increasingly, Tokyo.
  - Arbitrage is operable 24 hours a day, seven days a week, 365 days per year.
  - Electronic trading systems implemented on private value-added networks (i.e., Reuters and Telerate) are increasingly bypassing the regulated exchanges.
  - Products and services which are based on advanced technology, interactive, on-line, and real time are hot in this market segment.
- The erosion of the low-interest deposit base and the establishment of high loan loss reserves tying up bank capital base has changed the role of commercial banks from that of relatively long-range financial intermediation (two to five years) to that more frequently found among European financial institutions--merchant banking.
  - Money center and large regional banks are initiators of Fortune 1000 corporate lending, but then package the loan(s), selling participations to other banks and financial institutions, pension funds, and more recently foreign investors.
  - Acting in an investment banking role, money center and large regional banks are fostering, through leverage buy-out and merger/acquisition, the restructuring of commercial corporations, retaining both debt and equity interest in the outcome.
  - Financial data base information services and corporate analysis software (portfolio, valuation, etc.) are timely targets of opportunity in merchant banking.



### C. MARKET FORECAST, 1986-1991

- The top 300 banks, the focus of this report, though less than 3% of the total banks in the U.S., account for nearly 60% of the near \$1.4 billion currently being spent on wholesale banking information services, as shown in Exhibit II-3.
  - In fact, money center and regional banks, just over 100 in number and less than 1% of the total number of banks, are the top targets of opportunity, accounting for nearly 55% of the current total.
- The majority (52%) of total industry-specific financial information services expenditures are concentrated in the corporate banking line of business. However, other business lines gain prominence when focused on selected bank types.
  - Nearly 85% of total international information services expenditures are concentrated in the money center and regional banks.
  - Over 90% of corporate trust financial information services are concentrated in the top 300 banks.
  - Automated business services, which include such bread and butter applications as payroll, receivables, payables, and general ledger marketed primarily to middle-market and below operations, account for over one-quarter of the information and services expenditures total.
- The already attractive \$1.4 billion financial information services market will become even more so by 1991, as shown in Exhibit II-4, surpassing \$4 billion in size with an above average industry growth rate of 23% annually.

EXHIBIT II-3

INDUSTRY-SPECIFIC EXPENDITURES FOR WHOLESALE BANKING  
LINES-OF-BUSINESS BY BANK TYPE IN 1985

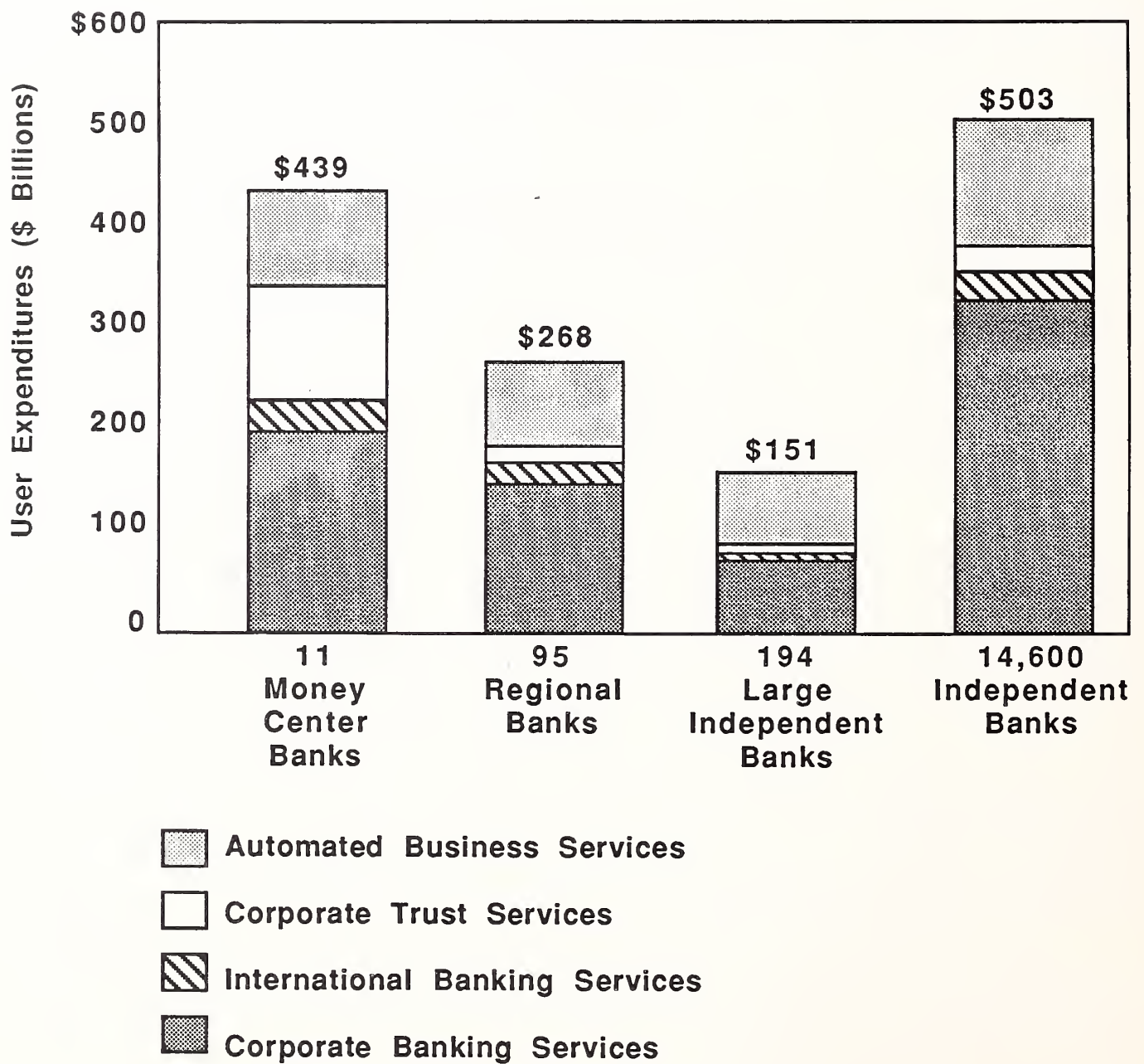
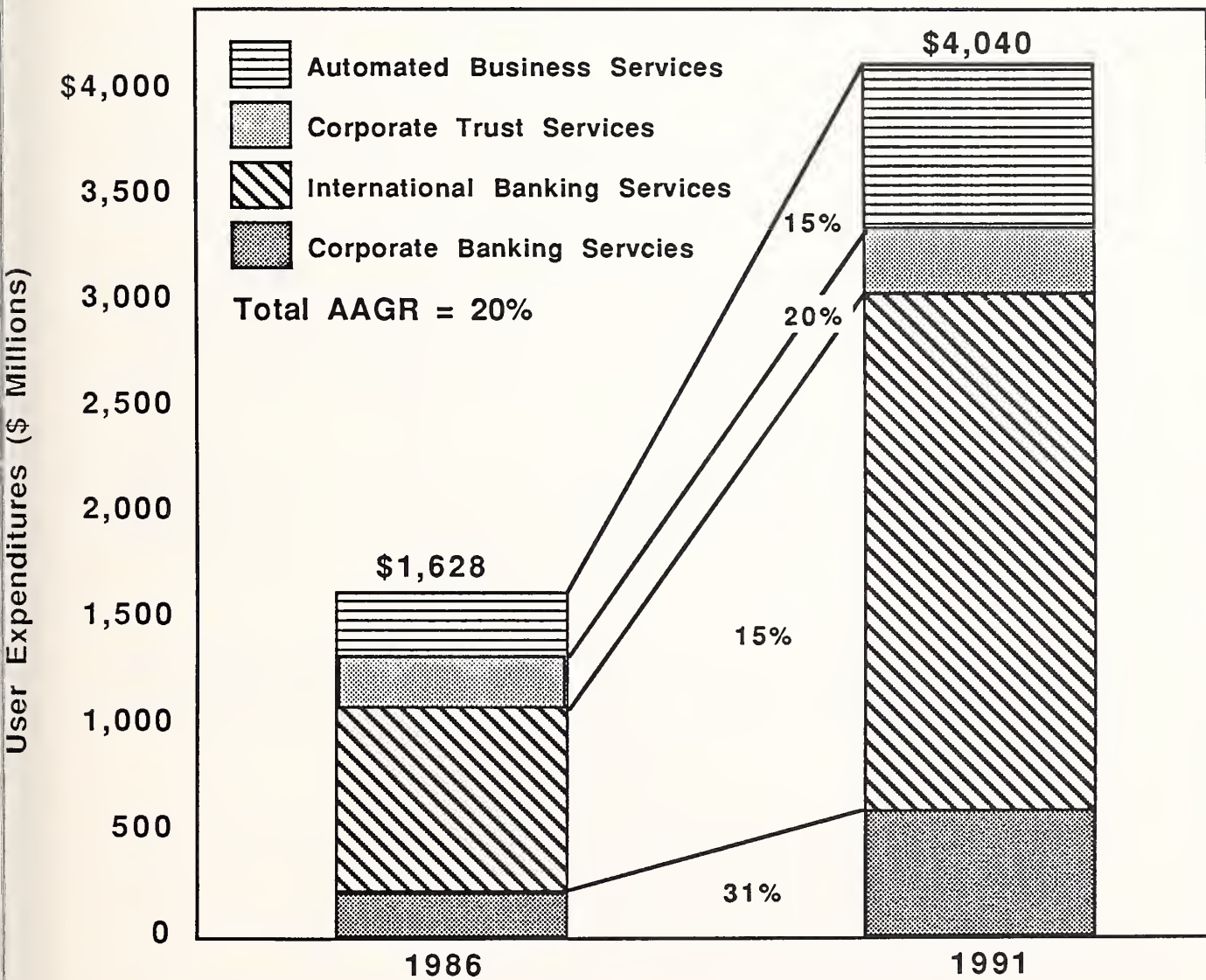


EXHIBIT II-4

FORECAST OF WHOLESALE BANKING  
INFORMATION SERVICES EXPENDITURES  
BY LINES-OF-BUSINESS, 1986-1991

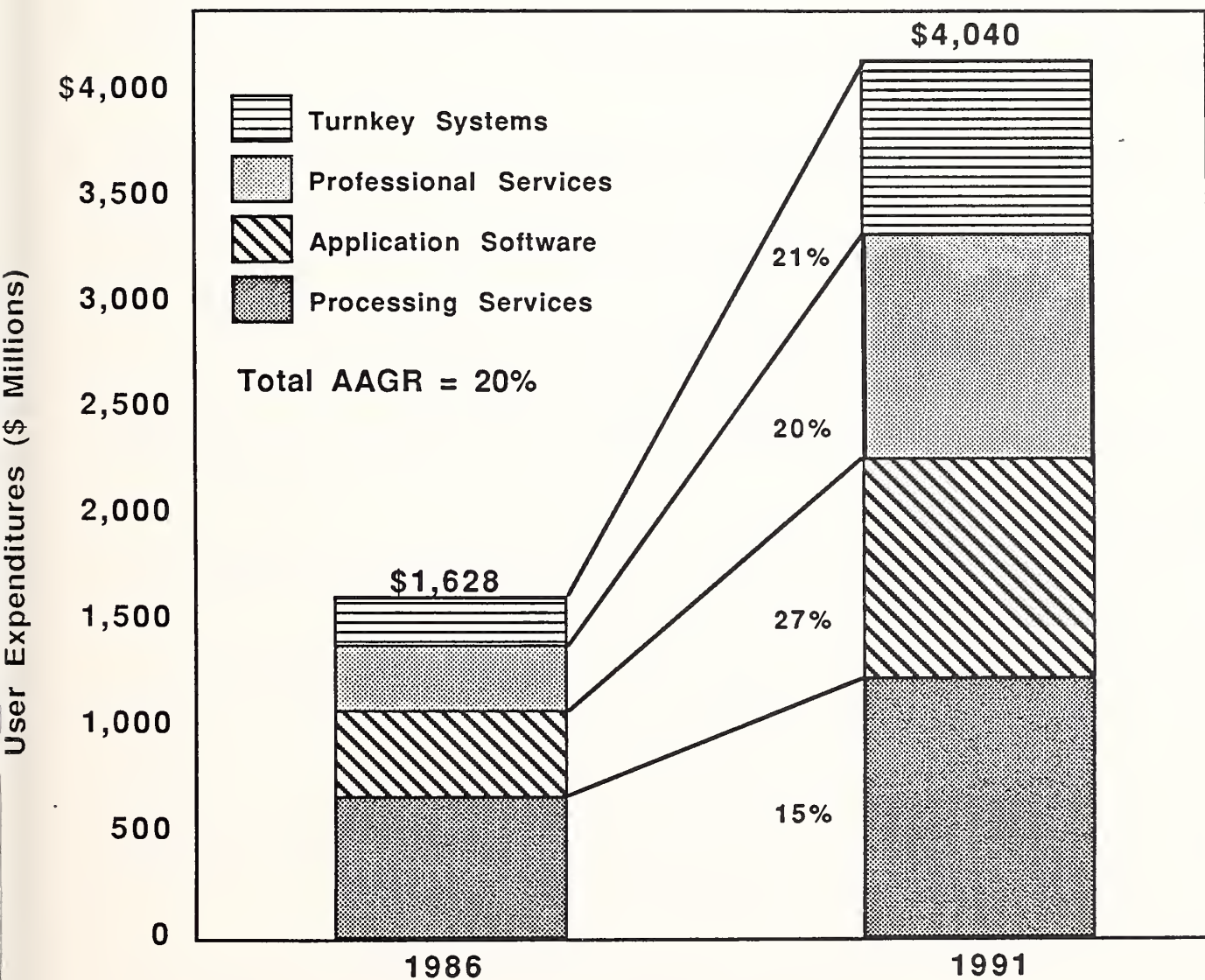


- As financial marketplaces become increasingly international, so will the international banking information services segment grow the most rapidly, approaching 15% of total expenditures over the next five years.
- Concentration on "relationship banking" will blur the lines between automated business and corporate banking services. This accounts for some of the above average growth of corporate banking services line of business, which is forecast to approach 60% of total information services expenditures by 1991.
- Expenditures for corporate trust services, a specialized market subsegment, is concentrated in less than 50 money center and regional banks. The best market opportunities are to be found in providing financial information services which allow greater flexibility and portfolio liquidity for master trust pension fund management.
- People-intensive information services, applications software, and professional services will become, as shown in Exhibit II-5, the dominant delivery mode by 1991.
  - Expenditures for the combined applications software and professional services delivery modes are forecast to reach 40% of the total market by 1991.
  - Expenditures for applications software in 1991 will begin rivaling those of processing services, each representing approximately 30% of total expenditures.
  - Micro-based applications software products in both the corporate and international banking lines of business will rise to nearly 5% of total 1991 expenditures. This market is even more significant when the micro-based portion of turnkey systems, itself over 15% of the total market, will likely exceed 30% by 1991.



EXHIBIT II-5

FORECAST OF WHOLESALE BANKING  
INFORMATION SERVICES EXPENDITURES  
BY DELIVERY MODE, 1986-1991





D. HIGH-POTENTIAL WHOLESALE BANKING FINANCIAL INFORMATION  
PRODUCTS/SERVICES OPPORTUNITIES

- Exhibit II-6 lists seven high-potential opportunities for financial information services.
- Except in international markets, Fortune 500 companies have been pretty well targeted by commercial banks with a wide range of corporate financial information services. The trend is strongly toward concentrating one-stop servicing of middle-market corporate America.
- Highly integrated, functional, and complex corporate line of business financial information services and products as applied to Fortune 500 companies are often overkill for Fortune 2000 and below companies. A degree of tailoring is in order.
  - Modular commercial loan packages with flexibility for a degree of customization implemented through professional services is one market of opportunity.
  - Another is applying the same strategy to cash/funds management for middle-market corporate treasurers.
- Corporate treasurers are becoming increasingly sophisticated in the wide variety of money market instruments available both on domestic and international money markets. Providing financial network services as well as highly interactive real time, on-line, inquiry, trading, and analysis software products is a specific high value-added market niche.
- Driven by the cost side of the funds equation, corporate treasurers are focusing increased attention on accounts receivable.

**EXHIBIT II-6**

**HIGH-POTENTIAL WHOLESALE BANKING FINANCIAL  
INFORMATION PRODUCTS/SERVICES OPPORTUNITIES**

- Tailor commercial loan packages for middle-market companies.
- Tailor cash/funds management products/services for middle market companies.
- Concentrate product development for money market services.
- Offer value-added data network services for lock-box, funds concentration, and disbursement services.
- Target implementation professional services for master trust investment and accounting.
- Leverage consumer ATM/POS networks for corporate wholesale/retail financial transactions.
- Target independent banks with downscale products/services normally provided by leading large banks.

- Commercial banks and other financial institutions are establishing processing centers for lock-box collection operations.
- Network services, frequently on a private-label basis, for funds concentration and timed disbursement receive both corporate and wholesale banking executives' attention.
- The top players (less than 20) spend between \$2-6 million annually on upgrading and expanding master trust investment and accounting financial information services.
  - This area is particularly attractive to the Big Eight CPA firms where private label and other partnering arrangements are strategically effective.
  - Concentration is more and more on money market instruments which increase liquidity and, hopefully, return on the investment fund portfolio.
- It is both possible and cost-effective to leverage increasingly shared and interfaced consumer ATM/POS networks in wholesale banking lines of business.
  - Such networks are valuable for gathering accounts receivable and other financial information for corporate America.
  - Corporate debit cards and electronic data interchange information can be routed to both corporate treasurers and selected concentration banks through consumer networks, both domestic and international.
- Desiring to remain competitive with larger money center and regional banks, independent bank wholesale banking executives are looking for "cheap" ways, although admittedly downscale, of saying that they offer similar products/services provided by leading large banks.

- Even if only 10% of the nearly 14,000 independent banks intend to meet larger bank competition, such banks, once identified, represent an incremental and highly profitable market segment.

## E. STRATEGIES FOR GROWING WITH THE TIMES

- The survey results, literature search, and interviews with top banking consultants and executives all point toward a commercial wholesale banking industry market that is in round-the-clock operation on a global basis. Strategies for dealing with this market are outlined below and in Exhibit II-7.
  - Successful vendors, even for micro-based turnkey systems (with few exceptions), need to take the on-line, interactive, real time, fail-safe, PC-based, network-to-mainframe(s) route in products/services development.
  - Except for perhaps the international banking arena, Fortune 500 companies have been pretty well blanketed with first (possibly second) generation wholesale banking financial information products and services. Attention should now be turned toward targeting financial information services tailored to middle market companies.
- The action really is with wholesale banking on a global basis. Successful corporate financial strategies depend on access to world money markets for debt, equity, or financing trade.
  - Value-added network services, including data base, analysis, and trading specializing in selected market niches, will result in highly successful ventures.

## **EXHIBIT II-7**

### **STRATEGIES FOR GROWING WITH THE TIMES**

- **Go the on-line, interactive, real time, fail-safe, PC-based, networked to mainframe(s) route.**
- **Target the top 300 banks for services tailored to middle market America.**
- **International banking, the future is now!**
- **Go the private label route for vertical market entry and expansion.**
- **Take advantage of requirements resulting from the new tax law.**
- **Use partnering for industry-specific applications development.**
- **Integrate advanced technology into industry-specific applications.**



- The Congress of the United States is just about to pass major revisions to the U.S. income tax law. A ripple effect will follow soon in Europe and the Far East (Japan). Both wholesale banking and corporate financial executives will need lots of help revising current applications and devising new solutions to cope with the myriad changes and implications of the major tax law revision.
  - The Big Eight CPA firms will, as a minimum, have a heyday offering professional services in this area.
  - Professional services vendors should consider this a specific area of opportunity, at least in the near term.
- Collapse of petroleum prices has resulted in balance sheets of public utilities being awash in cash and liquid assets. The result is a sharply rising interest on the part of utilities' corporate financial executives in utilizing funds management and other corporate financial information services. INPUT believes that the utilities sector is a prime target of opportunity for offering financial information products and services both from commercial banking banks and, on at least a private label basis, computer services vendors.
- The wholesale banking market segment requires highly sophisticated, industry-specific knowledge for successful applications development. A recommended method to gain market entry is the use of partnering arrangements to develop industry-specific applications which can then be leveraged to the market segment as a whole.
- The research indicated that selling "advanced technology" in the wholesale banking sector is not enough. Successful information processing vendors must integrate advanced technology into industry-specific applications, offering solutions based on advanced technology as a cost-effective route to bottom line profitability.



### III MARKET ANALYSIS



### III MARKET ANALYSIS

#### A. INTRODUCTION

- The market will first be characterized with respect to total user expenditures by four commercial bank types:
  - Money center banks.
  - Regional banks.
  - Large independent banks.
  - Independent banks.
- This characterization focuses attention on the top 300 banks in the U.S. and differs from the characterization usually presented in INPUT's reports on the banking and finance industry (see Volume III, Information System Requirements in Commercial Banking).
- The distribution of commercial bank and bank assets by bank type is as shown in Exhibit III-I. It is evident that the 11 money center banks having deposits greater than \$20 billion, less than one-tenth percent of the total number of banks control close to a quarter of total bank assets. Indeed, the top 300 banks, less than 3% of the total number, concentrate well over half of total bank assets.

EXHIBIT III-1

DISTRIBUTION OF COMMERCIAL BANKS AND BANK ASSETS  
BY TYPE IN 1985

BANK TYPE	DEPOSIT RANGE	NUMBER OF BANKS	ASSETS (\$ Billions)	PORTION OF TOTAL ASSETS (Percent)
Independent	<\$600 M	\$14,600	\$ 946	44%
Large Independent	\$600 M-1.9 B	194	249	12%
Regional	\$2.0 B-19.9 B	95	436	20%
Money Center	>\$20 B	11	500	24%
Total	-	\$14,900	\$2,131	100%



- The focus of the analysis that follows is on the wholesale banking segment of the commercial banking industry.
- The analysis first determines total user expenditures on industry-specific information services for all major bank functions by bank type and by delivery mode. The analysis will then focus on current and forecasted user expenditures in the wholesale banking segment comprised of the following functions:
  - Corporate banking.
  - Corporate trust.
  - International banking.
  - Automated business services.

## B. TOTAL USER EXPENDITURES

### I. USER EXPENDITURES IN 1985

- Industry-specific information services expenditures approach \$4 billion for the seven major functions of the four bank types comprising commercial bank operations, as shown in Exhibit III-2.
  - The top 300 banks, less than three percent of the total number, represent well over half of the information services marketplace.
  - The four functions related to wholesale banking represent 40% of total commercial bank expenditures.

EXHIBIT III-2

USER INDUSTRY-SPECIFIC INFORMATION SERVICES  
EXPENDITURES FOR COMMERCIAL BANKS  
BY FUNCTION AND TYPE IN 1985

BANK FUNCTION	BANK TYPE				
	INDEPENDENT	LARGE INDEPENDENT	REGIONAL	MONEY CENTER	TOTAL
Corporate Banking	\$349	\$122	\$138	\$194	\$803
Retail Banking	\$873	\$271	\$200	\$227	\$1,571
Card Products and Services	\$168	\$93	\$100	\$74	\$436
Trust	\$139	\$66	\$49	\$145	\$399
International Banking	0	\$5	\$32	\$82	\$119
Administrative Services	\$133	\$45	\$54	\$58	\$290
Business Services	\$130	\$10	\$72	\$85	\$297
Total	\$1,792	\$612	\$646	\$865	\$3,915

- The portion spent by the top 300 banks for the wholesale functions approaches one-quarter of total expenditures.
- The independents are a very large market; however, these expenditures are distributed among over 14,000 banks.

## 2. MARKET FORECAST, 1986-1991

- Processing services are, as shown in Exhibit III-3, still the most important delivery mode, representing just over half of the market in 1985.
  - Commercial banks are heavy users of professional services. This industry sector represents nearly 10% of the current market for professional services. In addition, over 20% of the expenditures by commercial banks are for professional services.
  - The top 300 banks spend a proportionally higher share of industry-specific information services on applications software, over 60% of the current total for all commercial banks.
- The forecast of user industry-specific financial information services expenditures for the 1985-1990 timeframe was presented in Volume I, Strategic Analysis: The Next Decade. Exhibit III-4 has been updated here to reflect the forecast through 1991.
  - Processing services will continue to dominate the market at just under 50% of total expenditures by 1991.
  - The market is shifting to the offering of people-intensive expert services, for example, applications software and professional services, which together are approaching 50% of the total market.

**EXHIBIT III-3**

**USER INDUSTRY-SPECIFIC FINANCIAL INFORMATION SERVICES  
FOR COMMERCIAL BANKS  
BY DELIVERY MODE AND TYPE IN 1985**

<b>INFORMATION SERVICES</b>	<b>USER EXPENDITURES (\$ Millions)</b>				<b>1985 TOTAL</b>
	<b>Inde- pendent</b>	<b>Large Indepen- dent</b>	<b>Regional</b>	<b>Money Center</b>	
<b>PROCESSING SERVICES</b>					
Remote Computing/Batch	\$ 695	\$ 192	\$ 197	\$ 338	\$1,432
Facilities Management	206	134	135	154	629
Total Processing Services	\$ 901	\$ 326	\$ 332	\$ 492	\$2,051
<b>APPLICATIONS SOFTWARE</b>					
Mainframe/Mini	259	97	\$ 90	\$ 154	600
Micro	13	14	10	13	50
Total Applications Software	\$ 272	\$ 111	\$ 100	\$ 167	\$ 650
<b>PROFESSIONAL SERVICES</b>	\$ 400	\$ 134	\$ 159	\$ 160	\$ 853
<b>TURNKEY SYSTEMS</b>	\$ 209	\$ 61	\$ 55	\$ 36	\$ 361
<b>Total</b>	<b>\$1,782</b>	<b>\$ 832</b>	<b>\$ 646</b>	<b>\$ 855</b>	<b>\$3,915</b>

EXHIBIT III-4

**FORECAST OF USER INDUSTRY-SPECIFIC FINANCIAL  
INFORMATION SERVICES EXPENDITURES  
FOR COMMERCIAL BANKS BY DELIVERY MODE, 1986-1991**

INFORMATION SERVICES	USER EXPENDITURES (\$ Millions)			AAGR (Percent) 1986-1991
	1985	1986	1991	
<b>PROCESSING SERVICES</b>				
Remote Computing/Batch	\$1,422	\$1,659	\$3,510	16%
Facilities Management	629	740	1,490	15%
Total Processing Services	\$2,051	\$2,399	\$5,000	16%
<b>APPLICATIONS SOFTWARE</b>				
Mainframe/Mini	600	743	\$2,095	23%
Micro	50	69	275	32%
Total Applications Software	\$ 650	\$ 812	\$2,370	24%
<b>PROFESSIONAL SERVICES</b>	\$ 853	\$1,014	\$2,390	19%
<b>TURNKEY SYSTEMS</b>	\$ 361	\$ 423	\$ 920	17%
<b>Total</b>	<b>\$3,915</b>	<b>\$4,648</b>	<b>\$10,680</b>	<b>18%</b>

- Counter to all the popular press about micro and personal computer markets, mainframe and minicomputers will still remain the mainstay of the commercial banking industry. The portion of mainframe/mini-related information services is forecast to remain well over 80% of total expenditures.

## C. WHOLESALE BANKING EXPENDITURES

### I. USER EXPENDITURES IN 1985

- Current user industry-specific financial information services expenditures for the four functions comprising banking services is significant, approaching, as shown in Exhibit III-5, \$1 billion or nearly 20% of total expenditures.
  - The top 300 banks represent well over 60% of the current market.
  - Over 85% of corporate trust information services are supplied to the largest banks.
  - International banking services are the province of the top 100 money centers and regionals banks. These banks spend 95% of the total for international banking information services.
  - Providing corporate banking and automated business services to small corporations and proprietorships accounts for the major portion of independent banks information services expenditures, which approach 45% of the current total.



**EXHIBIT III-5**

**USER INDUSTRY-SPECIFIC FINANCIAL INFORMATION SERVICES  
USER EXPENDITURES FOR WHOLESALE BANKING SERVICES  
BY BANK TYPE IN 1985**

<b>BANK FUNCTION</b>	<b>BANK TYPE</b>				
	<b>INDEPENDENT</b>	<b>LARGE INDEPENDENT</b>	<b>REGIONAL</b>	<b>MONEY CENTER</b>	<b>TOTAL</b>
<b>Corporate Banking Services</b>	<b>\$349</b>	<b>\$122</b>	<b>\$138</b>	<b>\$194</b>	<b>\$803</b>
<b>International Banking Services</b>	<b>0</b>	<b>\$5</b>	<b>\$32</b>	<b>\$82</b>	<b>\$119</b>
<b>Corporate Trust</b>	<b>\$24</b>	<b>\$14</b>	<b>\$26</b>	<b>\$88</b>	<b>\$152</b>
<b>Business Services</b>	<b>\$130</b>	<b>\$10</b>	<b>\$72</b>	<b>\$85</b>	<b>\$297</b>
<b>Total</b>	<b>\$503</b>	<b>\$151</b>	<b>\$268</b>	<b>\$449</b>	<b>\$137</b>

## 2. MARKET FORECAST, 1986-1991

- Wholesale banking industry-specific financial information services will, as shown in Exhibit III-6, become a \$2.4 billion marketplace by 1991.
  - As financial marketplaces become ever increasingly international, so will the international banking information services grow the most rapidly, approaching 15% of total expenditures over the next five years.
  - Concentration on "relationship banking" will blur the lines between automated business and corporate banking services, accounting for some of the above average growth of the corporate banking services function which is forecast to approach 60% of total expenditures by 1991.
- People-intensive information services, applications software, and professional services will become, as shown in Exhibit III-7, more dominant by 1991.
  - The combined applications software and professional services sub-segments are forecast to approach 50% of the total market.
  - Applications software will approach processing services in importance. Micro-based applications software products in both the corporate and international banking functions will rise to nearly 5% of total 1991 expenditures. This market is even more significant when one considers that probably half of the turnkey systems, which represent 17% of the total market, will by 1991 be micro-based.

## 3. MARKET FORECAST BY APPLICATION, 1986-1991

- Commercial banks will, as shown in Exhibit III-8, spend \$2.4 billion in 1991 for information services related to corporate banking.

**EXHIBIT III-6**

**FORECAST OF USER INDUSTRY-SPECIFIC FINANCIAL INFORMATION  
SERVICES EXPENDITURES FOR WHOLESALE BANKING SERVICES  
BY BANK FUNCTION, 1986-1991**

<b>WHOLESALE BANKING SERVICES</b>	<b>USER EXPENDITURES (\$ Millions)</b>			<b>AAGR (Percent) 1986-1991</b>
	<b>1985</b>	<b>1986</b>	<b>1991</b>	
<b>Corporate Banking Services</b>	<b>\$803</b>	<b>\$952</b>	<b>\$2,390</b>	<b>20%</b>
<b>International Banking Services</b>	<b>119</b>	<b>154</b>	<b>590</b>	<b>31%</b>
<b>Corporate Trust</b>	<b>152</b>	<b>180</b>	<b>360</b>	<b>15%</b>
<b>Business Services</b>	<b>297</b>	<b>342</b>	<b>700</b>	<b>15%</b>
<b>Total</b>	<b>\$1,371</b>	<b>\$1,628</b>	<b>\$4,040</b>	<b>20%</b>

**EXHIBIT III-7**

**FORECAST OF USER INDUSTRY-SPECIFIC  
FINANCIAL INFORMATION SERVICES EXPENDITURES  
FOR WHOLESALE BANKING SERVICES BY DELIVERY MODE, 1986-1991**

INFORMATION SERVICES	USER EXPENDITURES (\$ Millions)			1986-1991 AAGR (Percent)
	1985	1986	1991	
<b>PROCESSING</b>				
Remote Computing/Batch	\$447	\$515	\$1,050	15%
Facilities Management	\$140	\$161	\$310	14%
<b>Total Processing Services</b>	<b>\$587</b>	<b>\$676</b>	<b>\$1,360</b>	<b>15%</b>
<b>APPLICATIONS SOFTWARE</b>				
Mainframe/Mini	\$241	\$288	\$970	27%
Micro	\$39	\$53	\$160	25%
<b>Total Applications Software</b>	<b>\$280</b>	<b>\$341</b>	<b>\$1,130</b>	<b>27%</b>
Professional Services	\$294	\$357	\$885	20%
Turnkey Systems	\$210	\$254	\$665	21%
<b>Total</b>	<b>\$1,371</b>	<b>\$1,628</b>	<b>\$4,040</b>	<b>20%</b>

**EXHIBIT III-8**

**FORECAST OF USER INDUSTRY-SPECIFIC FINANCIAL  
INFORMATION SERVICES EXPENDITURES  
FOR CORPORATE BANKING SERVICES BY DELIVERY MODE, 1986-1991**

**Function Examples: Commercial Loans, Cash Management, Money Market,  
Lock-Box.**

<b>INFORMATION SERVICES</b>	<b>USER EXPENDITURES (\$ Millions)</b>			<b>1986-1991 AAGR (Percent)</b>
	<b>1985</b>	<b>1986</b>	<b>1991</b>	
<b>PROCESSING</b>				
Remote Computing/Batch	\$195	\$231	\$505	17%
Facilities Management	\$113	\$129	\$240	13%
<b>Total Processing Services</b>	<b>\$308</b>	<b>\$360</b>	<b>\$745</b>	<b>16%</b>
<b>Applications Software</b>	<b>\$170</b>	<b>\$203</b>	<b>\$710</b>	<b>28%</b>
<b>Professional Services</b>	<b>\$190</b>	<b>\$227</b>	<b>\$545</b>	<b>19%</b>
<b>Turnkey Systems</b>	<b>\$135</b>	<b>\$162</b>	<b>\$390</b>	<b>20%</b>
<b>Total</b>	<b>\$803</b>	<b>\$952</b>	<b>\$2,390</b>	<b>20%</b>

- Greatest growth will be experienced in the area of applications software, which will equal total processing services as the most important mode of delivery.
  - Cash management services are the major component of remote computing. Cash management services are offered both directly by banks and as private label services by National Data Corporation, ADP, and others.
  - Professional services, particularly in the area of implementation services or implementing and tailoring commercial loan and cash management systems for corporate clients, is an important market sector and will approach 20% of total 1991 expenditures.
  - Corporate banking information services is an excellent target of opportunity. The annual growth rate is higher than that for the industry as a whole.
- The growing importance of international trade and money markets in relationship to the U.S. economy directly relates to the very high annual growth rate, as shown in Exhibit III-9, for information services related to international banking.
- Growth in all delivery modes is as great or greater than for other segments of wholesale banking services.
  - The high growth rate for processing services is directly related to such functions as foreign exchange, merchant and investment banking, and money market instruments such as futures, contracts, and Eurobonds.
  - A proliferation of micro-based turnkey systems results from automating functions such as letters of credit, international cash management, bills of lading, forward funding, etc.



**EXHIBIT III-9**

**FORECAST OF USER INDUSTRY-SPECIFIC FINANCIAL  
INFORMATION SERVICES EXPENDITURES  
FOR INTERNATIONAL BANKING SERVICES BY DELIVERY MODE, 1986-1991**

**Function Examples: Letters of Credit; Foreign Exchange; International Lending;  
Merchant Banking; Investment Banking; Funds Transfer.**

<b>INFORMATION SERVICES</b>	<b>USER EXPENDITURES (\$ Millions)</b>			<b>1986-1991 AAGR (Percent)</b>
	<b>1985</b>	<b>1986</b>	<b>1991</b>	
<b>PROCESSING</b>				
Remote Computing/Batch	\$40	\$52	\$200	31%
Facilities Management	-	-	-	-
<b>Total Processing Services</b>	<b>\$40</b>	<b>\$52</b>	<b>\$200</b>	<b>31%</b>
<b>Application Software</b>	<b>\$30</b>	<b>\$37</b>	<b>\$155</b>	<b>33%</b>
<b>Professional Services</b>	<b>\$24</b>	<b>\$33</b>	<b>\$110</b>	<b>27%</b>
<b>Turnkey Systems</b>	<b>\$25</b>	<b>\$32</b>	<b>\$125</b>	<b>31%</b>
<b>Total</b>	<b>\$119</b>	<b>\$154</b>	<b>\$590</b>	<b>31%</b>

- The market for applications software, itself representing over 25% of total 1991 expenditures, is an even better target of opportunity when coupled with turnkey systems, which represent another 20% of the total market.
- Major revisions to laws, regulation, and investment management in corporate trust applications account for the high growth rates shown in Exhibit III-10 for applications software, professional services, and turnkey systems.
  - The major portion of corporate trust is handled by major money center and regional banks as in-house operations.
  - Stockholder and employee benefit accounting are frequently handled through processing services.
  - Applications software, both directly and through turnkey systems implemented on minis and increasingly on micros and personal computers, is a major delivery mode, accounting for at least 35% of the total market.
- Automated business services, offered primarily to smaller corporations and proprietorships and to some middle market companies, is still, as shown in Exhibit III-11, a significant bread and butter market segment.
  - Total 1991 expenditures will be \$700 million, with processing services still remaining the dominant delivery mode, approaching 45% of total expenditures.
  - The integration of all wholesale banking functions under the concept of "relationship banking" is blurring the distinction between automated business services, shifting some of the growth formerly forecast for automated business services to the corporate banking segment.

**EXHIBIT III-10**

**FORECAST OF USER INDUSTRY-SPECIFIC FINANCIAL  
INFORMATION SERVICES EXPENDITURES  
FOR CORPORATE TRUST BY COMMERCIAL BANKS, 1986-1991**

Function Examples: KEOGH, Employee Benefit Plans, Master Trust,  
Stock Transfer, Investment Management.

INFORMATION SERVICES	USER EXPENDITURES (\$ Millions)			1986-1991 AAGR (Percent)
	1985	1986	1991	
<b>PROCESSING</b>				
Remote Computing/Batch	\$57	\$61	\$80	6%
Facilities Management	\$15	\$17	\$25	8%
<b>Total Processing Services</b>	<b>\$72</b>	<b>\$78</b>	<b>\$105</b>	<b>6%</b>
Applications Software	\$30	\$39	\$105	22%
Professional Services	\$30	\$38	\$90	19%
Turnkey Systems	\$20	\$25	\$60	19%
<b>Total</b>	<b>\$152</b>	<b>\$180</b>	<b>\$360</b>	<b>15%</b>

**EXHIBIT III-11**

**FORECAST OF USER INDUSTRY-SPECIFIC FINANCIAL  
INFORMATION SERVICES EXPENDITURES  
FOR BUSINESS SERVICES BY COMMERCIAL BANKS, 1986-1991**

Function Examples: Payroll, Accounting, Taxes, Receivables.

INFORMATION SERVICES	USER EXPENDITURES (\$ Millions)			1986-1991 AAGR (Percent)
	1985	1986	1991	
<b>PROCESSING</b>				
Remote Computing/Batch	\$155	\$171	\$265	9%
Facilities Management	\$12	\$15	\$45	25%
<b>Total Processing Services</b>	<b>\$167</b>	<b>\$186</b>	<b>\$310</b>	<b>11%</b>
<b>Applications Software</b>	<b>\$50</b>	<b>\$62</b>	<b>\$140</b>	<b>21%</b>
<b>Professional Services</b>	<b>\$50</b>	<b>\$59</b>	<b>\$140</b>	<b>19%</b>
<b>Turnkey Systems</b>	<b>\$30</b>	<b>\$35</b>	<b>\$90</b>	<b>21%</b>
<b>Total</b>	<b>\$297</b>	<b>\$342</b>	<b>\$680</b>	<b>15%</b>

#### IV WHOLESALE BANKING--THE DYNAMICS OF CHANGE





## IV WHOLESALE BANKING—THE DYNAMICS OF CHANGE

### A. THE MARKETPLACE DYNAMICS

- The wholesale banking sector is changing perhaps even more rapidly than the retail or consumer sector. Commercial banks and other financial intermediaries are rapidly and continually changing their products and services offerings to the corporate marketplace for debt, equity, and money market transactions.
- Ever-growing, complex, and expanding electronic telecommunication systems are extending wholesale banking on a global basis, especially for multinational corporations, and are increasingly used for financing both export and import for domestic middle American companies.
- Products and services are becoming increasingly more on-line and interactive, with corporate access to commercial bank data bases and financial information services via proprietary, leased, and shared telecommunications networks becoming less prevalent.
- A key to supporting the dynamics of change is computer technology, both hardware and software, that permits planning and implementation of full relationship banking between corporate America and financial intermediaries. The material that follows is illustrative of the dynamics of change.

- On October 27, 1986, international money markets in London will begin and will thereafter become increasingly deregulated. Major U.S. money center and investment banking houses will set up shop to compete in London money markets, increasingly linking London with New York and other major U.S. financial centers.
  - The major players and the international lines of businesses involved are as shown in Exhibit IV-1.
  - The rapid growth of U.S. corporate securities issued in the Euromarket, 75% annual growth over the past three years, is shown in Exhibit IV-2.
- Equally important is the expansion of U.S. capital markets into Japan whose growing trade surplus is accelerating its importance in world money markets, markets that are no longer dominated by the U.S. economy.
  - Growth of the top seven players is shown in Exhibit IV-3.
  - The latest example of strategic partnering is between Sumitomo Bank and Goldman, Sachs, giving Goldman, Sachs an underwriting entry in Japan for both equity and debt issues.
  - Sumitomo will inject \$5 million in capital in exchange for 12.5% of Goldman's profit, raising Goldman's capital base to over \$1.5 billion.
- International money markets are becoming increasingly linked in operations which will lead to 24-hour global trading.
  - The London Stock Exchange and the National Association of Securities Dealers have implemented a system to swap price quotes on more than 550 British and American issues. The network permits investors in Europe and the U.S. to continue trading even though their own exchanges may be closed.

## EXHIBIT IV-1

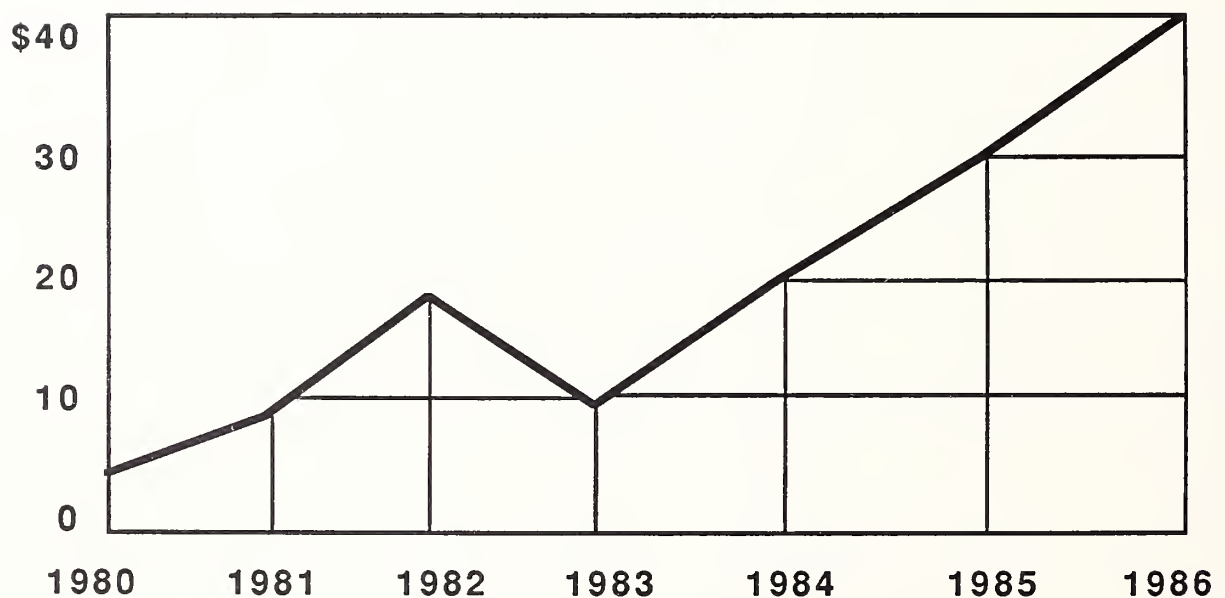
**EXPANSION OF U.S. FINANCIAL INSTITUTIONS INTO  
LONDON INTERNATIONAL BANKING MONEY CENTER FINANCIAL SERVICES**

LONDON INTERNATIONAL BANKING FINANCIAL SERVICES	FINANCIAL U.S. INSTITUTIONS									
	Chase Manhattan Bank	Chemical Bank	Citicorp	Goldman Sachs Co.	Merril Lynch, Inc.	Morgan Guaranty	Morgan Stanley, Inc.	Salomon Brothers, Inc.	Security Pacific Corp.	American Express Comp.
United Kingdom Equities Market Making	X		X	X	X	X	X	X	X	X
International Equities Market Making	X		X	X	X	X	X	X	X	X
Gilts Primary Dealing	X		X	X	X		X	X	X	X
Futures Options and Swaps	X	X	X	X	X	X	X	X	X	X
Eurobond Market Making	X	X	X	X	X	X	X	X	X	X
Eurobond Underwriting	X	X	X	X	X	X	X	X	X	X
Euro-commercial Paper	X	X	X		X	X	X	X	X	X
Sterling Commercial Paper	X	X	X		X	X	X	X	X	X
U.S. Treasuries Market Making	X	X	X	X	X	X	X	X	X	X
Equity Issues	X		X	X	X	X	X	X	X	X
Retail Stockbroking	X		X		X		X		X	X
Retail Banking			X							
Wholesale Banking	X	X	X		X	X			X	
Foreign Exchange	X	X	X	X	X	X	X	X	X	X
Mergers and Acquisitions	X		X	X	X	X	X	X	X	X
Commodities		X	X	X	X			X		X
Bullion	X			X	X	X		X		X
Consumer Finance		X	X							
Unit Trusts	X		X		X					
Fund Management	X	X	X		X	X	X			X
Private Client Investment	X	X	X	X	X	X	X		X	X
Estate Agents		X								
Mortgages (£)	X	X	X					X		
Commercial Property			X	X	X					
Venture Capital			X		X			X		
Insurance		X	X		X					

EXHIBIT IV-2

GROWTH OF INTERNATIONAL INVESTMENT BANKING  
DEBT/EQUITY ISSUES

Issues by United States companies of all types of public securities in Euromarket, in billions of dollars.



\* Annualized estimate based on first-quarter activity

Source: Securites Data Company

EXHIBIT IV-3

EXPANSION OF U.S. INVESTMENT BANKING FIRMS INTO  
GLOBAL MONEY MARKETS, 1984-1986

LONDON

<b>Drexel Burnham Lambert:</b> 277, up 13%	<b>Merrill Lynch:</b> 1,200, up 12%	<b>Shearson Lehman Brothers:</b> 800, when Acquisition of L. Messel & Company Finalized at End of April
<b>First Boston, Credit Suisse First Boston:</b> 620, up 24%	<b>Morgan Stanley:</b> 460, up 53%	
<b>Goldman, Sachs:</b> 300, up 67%	<b>Salomon Brothers:</b> 330, up 83%	

TOKYO

<b>Drexel Burnham Lambert:</b> 19, up 217%	<b>Merrill Lynch:</b> 260, up 18%	<b>Shearson Lehman Brothers:</b> 35, with 75 to 100 Total Expected by Year-end
<b>First Boston:</b> 44, up 300%	<b>Morgan Stanley:</b> 160, up 220%	
<b>Goldman, Sachs:</b> 60, up 140%; 100 Total Expected within Year	<b>Salomon Brothers:</b> 80, up 135%	



- Institutional Networks, Inc., in a joint venture with Reuters, has instituted a global trading system for trading more than 8,000 U.S. stocks between corporate and pension fund managers, banks, and other financial institutions.
- Illustrative of rapidly expanding international money markets, foreign exchange transactions cleared through the N.Y. Federal Reserve Banks exceeded \$50 billion a day in June 1986, more than double the volume in the past three years.
- The very nature of a commercial bank's financial intermediary role is rapidly changing as banks reorganize their balance sheets to meet the dynamics of change.
  - As was shown in Chapter III of Volume I, money center and large regional banks are packaging and selling loan participations to independent banks, pension funds, and international investors. Annual growth rate of sold loan participation has exceeded 80% over the past three years.
  - Heavily involved in "leveraged buyouts," investment banks have greatly increased their capital base (some by going public) to retain equity and, hence, both control and hopefully increase profitability from investments in commercial corporations. This trend will form closer links between the institutions involved and their corporate clients.
- Other examples of the trend toward on-line automation in securities trading are:
  - D-R Technologies has developed an automated order entry and execution system for commodities on the Chicago Board of Trade. The system handles options and futures in commodities, metals, and financial futures.



- AT&T is offering electronic services from regional brokerage houses directly to the exchange floor.
- The Bermuda-based International Futures Exchange (INTEX) permits trading between investors and brokers internationally routed electronically through a CPU in the Bermudas.
- The Chicago Board of Options Exchange, in a partnering arrangement, made a near 20% equity investment in Instinet Corporation, expanding the company's electronic securities trading services.
- Becoming a low-cost provider of value-added financial information services to corporate clients is the focus of relationship banking in the wholesale sector.
  - The trend is toward banking by "remote control" or on an on-line interactive remote basis. The strategy includes three major components: (1) consolidation of customer information files; (2) software which organizes existing and future products in a systematic and interrelated way; (3) a tailored and integrated bank relationship statement.
  - The functions integrated include checking, savings, lines of credit, investment certificates, IRAs, loans, mortgages, auto leases, discount brokerage, commercial loans, and investment banking transactions.
  - Advanced functions include bulletin boards for such things as reminders, analysis of usage data, actual versus goal, graphics, and financial planning (see Exhibit III-18 in Volume I).

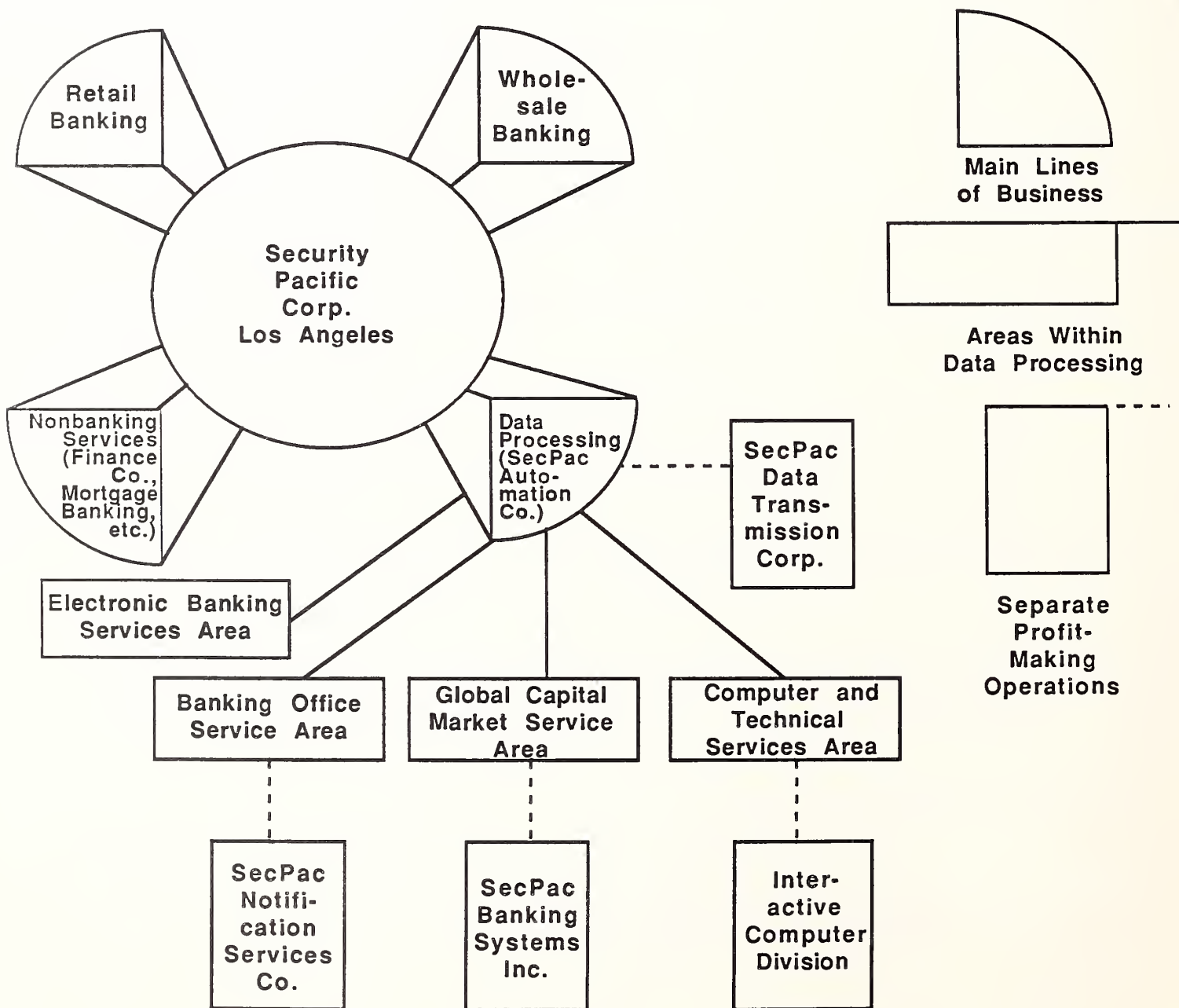
## B. WHOLESALE BANKING TRENDS

- Money center and regional banks (the top 300) are responding to the dynamics of change through reorganization and strategic implementation of electronic financial information systems.
- By selecting John Reed as Chairman, Citicorp signaled its intention of making electronic technology a factor, if not the key factor, in offering its wholesale services to corporate America worldwide. Details of Citicorp's telecommunications strategy are discussed in Chapter VII.
- Giving recognition to the importance of investment banking, which in 1985 represented over one-third of total earnings, Citicorp reorganized its management structure to three sectors:
  - Investment banking under Thomas C. Theobald.
  - Institutional banking under Lawrence M. Small.
  - Individual (U.S.) banking under Richard Braddock.
- Focusing more attention on investment banking, Manufacturers Hanover has recently realigned its investment banking sector.
  - A separate organization was established for asset/liability management, including interest rate and currency swaps and asset sales.
  - The International Capital Markets Group was expanded and extended to London.
  - A new unit was formed to handle merger, acquisition, and leverage buyout.

- The treasury unit is concerned with worldwide securities trading and sales activities.
- The realignment was planned to improve delivery of investment banking services on a worldwide basis.
- Clients will be tied into the investment banking functions through information technology under the "relationship banking" concept.
- Following the trend of uniting commercial lending and investment banking, Bank of America has reorganized its corporate banking division by:
  - Establishment of a corporate payments division handling corporate cash management and lock-box operations.
  - Transfer of investment banking from the capital markets group to corporate banking.
- The move is seen to provide corporate customers with both information and transaction services, including access to credit as well as to capital markets.
- The strategy is to focus its "network" of services for customers needing financial transactions worldwide.
- Giving recognition to the importance of electronic technology to its corporate clients, Security Pacific Corporation has established an automation company, as shown in Exhibit IV-4, as one of its four lines of business.
  - The bank's latest electronic network services offering is trading options on U.S. securities through Security Pacific Options Services Corporation in New York., which utilizes networking services of Security Pacific Data Transmission Corporation.

# EXHIBIT IV-4

## ESTABLISHMENT OF SECURITY PACIFIC AUTOMATION COMPANY



- Details of Security Pacific's electronic strategy are presented in Chapter VII.
- Focusing its attention on the top tier of corporate clients (\$30 million in sales and above), Bankers Trust is becoming almost exclusively a merchant banking company.
  - Skirting the McFadden and Glass-Steagall banking acts, Bankers Trust has become heavily involved as an agent for issuing commercial paper and as a quasi-investment banker in packaging and selling commercial loan participations.
  - In 1985, Bankers Trust handled in excess of \$8 million loan sales and trades.
  - The ability to quantify risk in relation to return on capital allows the bank to evaluate each of its wholesale line-of-business offerings, tracking performance back to operating departments and even to individuals.
  - Further analysis on Bankers Trust can be found in Chapter III of Volume I.

### C. THE CORPORATE RESPONSE

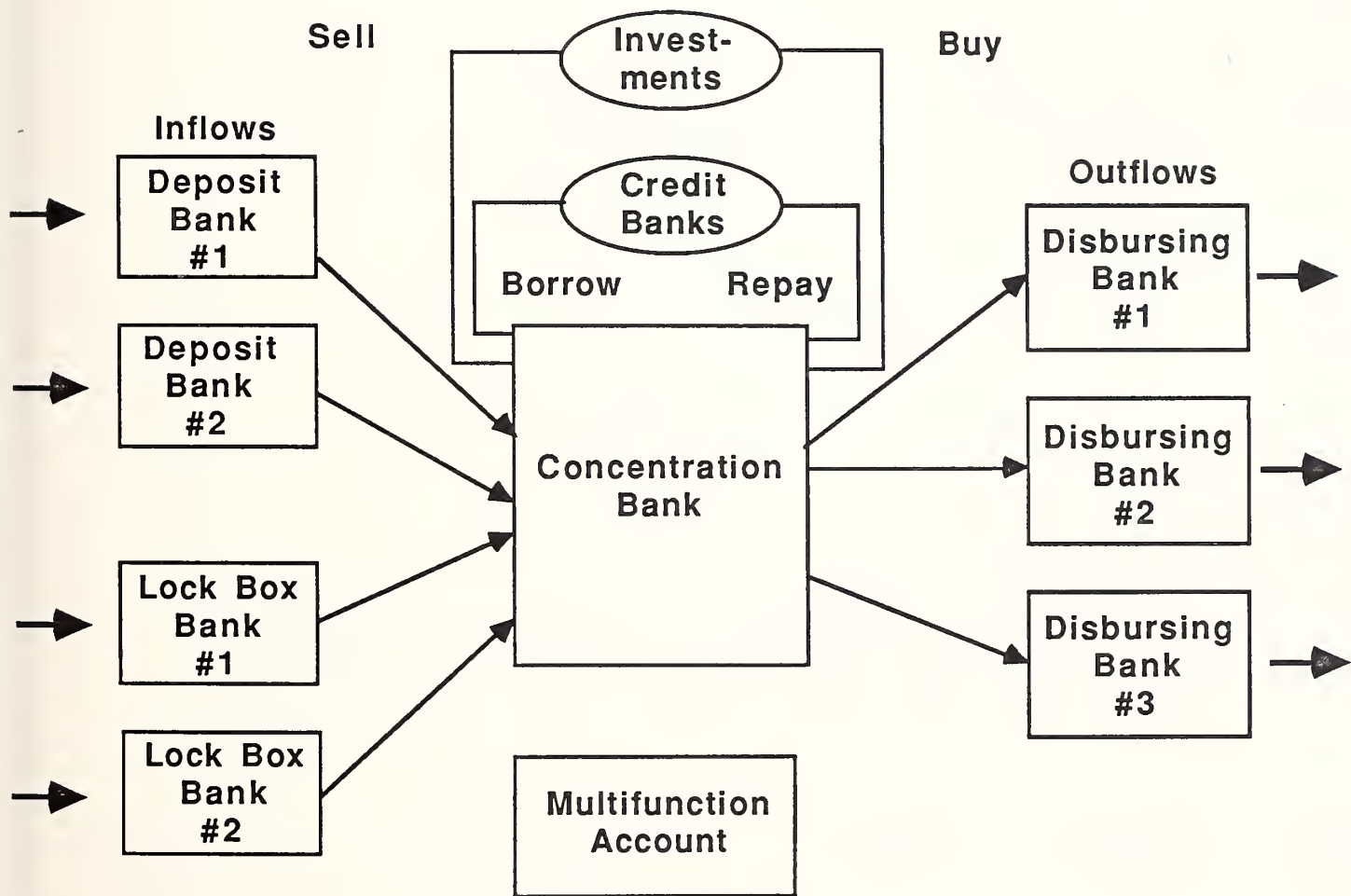
- In a world of changing dynamics, with interest rates and foreign exchange rates widely fluctuating and uncertainty the order of the day, corporate financial executives are viewing cash/funds management as key area affecting bottom line corporate performance.

- A traditionally and narrowly defined definition of the cash flows involving inflows, outflows, and internal or intra-bank transfers is illustrated in Exhibit IV-5. Here the key to cash flow management is the "concentration bank" offering an array of multifunction financial information services.
- A frequent strategy of corporate fund managers is the optimization of the float, internal, and external costs associated with corporate cash/funds management. The minimization of costs (alternately maximization of short-term funds investment) depends on controlling components of the cash inflows and outflows as shown in Exhibit IV-6.
- Currently cash/fund managers have control of only a portion of the time line associated with payables and receivables processing.
- Successful implementation of its future funds management systems will require organizational shifts to establish operational control over the complete cash flow timeline.
- By the end of the decade, advanced funds management systems will be operating under the following conditions.
  - National banking.
  - On-line intra-day inquiry on cash.
- Banks and commercial corporate financial executives are looking for solutions that are correctly targeted, solve the current problem, and have the flexibility to grow with the times.
- Knowledge of the appropriate wholesale line of business, whether it be corporate lending, corporate trust, investment banking, or international financial transactions, requires highly sophisticated technical knowledge on the vendor's part, expertise which can be frequently obtained through



EXHIBIT IV-5

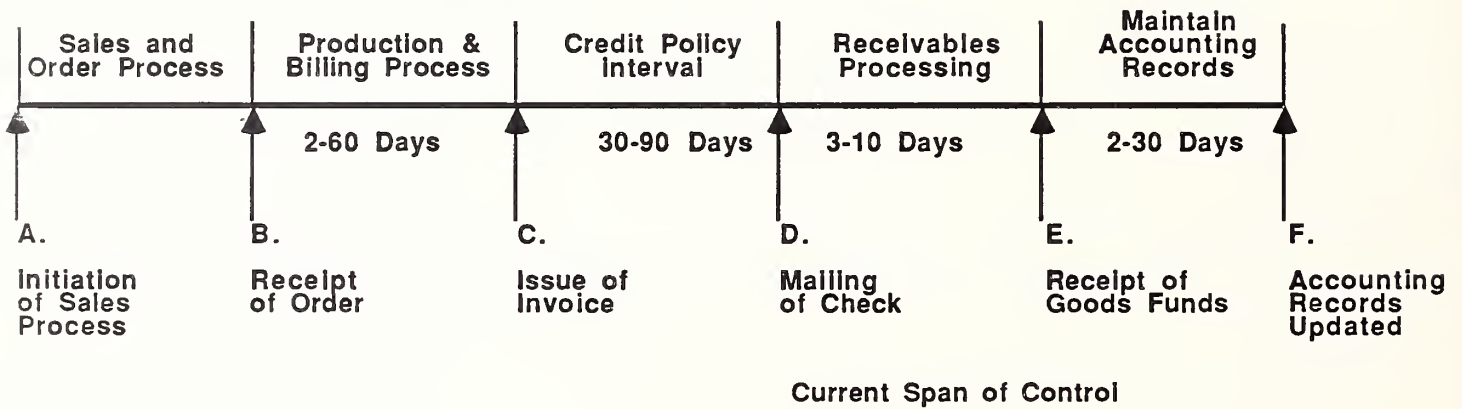
CORPORATE CASH/FUNDS MANAGEMENT



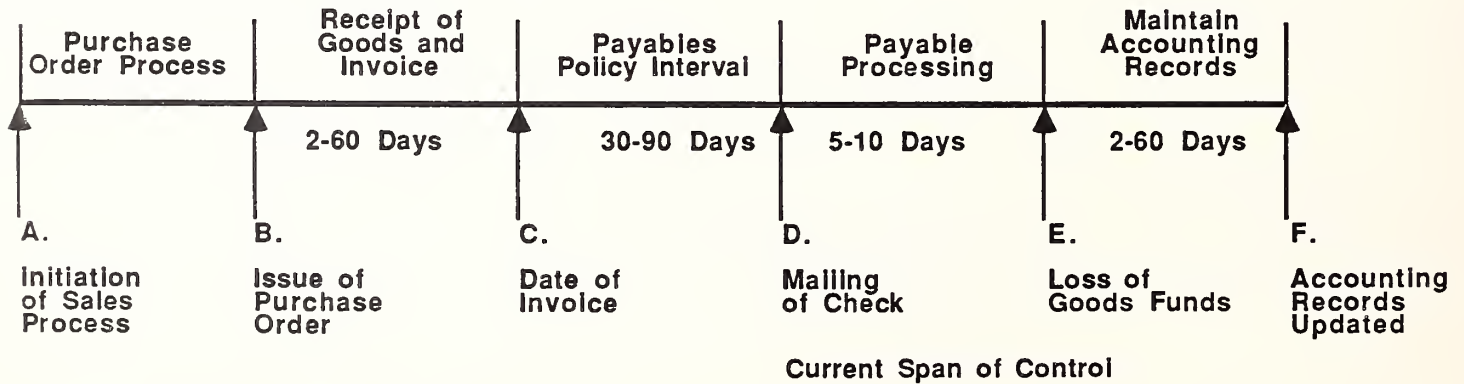
# EXHIBIT IV-6

## TOTAL CASH/FUNDS MANAGEMENT TIME/COST LINE

### COLLECTION TIME/COST LINE



### DISBURSEMENT TIME/COST LINE



strategic partnering arrangements with the initial users of the financial information system involved.

- It is fairly obvious that systems that are on-line, near real time, highly interactive, and data base-oriented with mainframe to micro and a wide variety of host mainframe vendor interface capability will receive prompt attention from interested wholesale banking and commercial corporate financial executives.
- Chapters V and VI contain specific vendor opportunities for wholesale banking market entry and expansion.



V CORPORATE FINANCIAL INFORMATION SERVICES  
REQUIREMENTS ANALYSIS





## V CORPORATE FINANCIAL INFORMATION SERVICES REQUIREMENTS ANALYSIS

### A. INTRODUCTION

- The analysis that follows is based upon the 74 interviews of corporate financial executives, shown in Exhibit I-3.
- An attempt was made to segregate the data by market sector. However, only three market sectors had a large enough sample size to be useful for meaningful stratification. The market sector stratification selected is:
  - Retail sector.
  - Utility sector.
  - Manufacturing sector.
  - All others (insurance, communications, services, and banking and finance).

## B. CURRENT ELECTRONIC PRODUCT OFFERINGS

### 1. ACCOUNT BALANCE AND TRANSACTION DETAIL

- An extremely high portion of the executives interviewed primarily used commercial banks to manage corporate checking accounts, as shown in Exhibit V-1.
  - Only one of the respondents utilized a third-party vendor to obtain the information electronically.
  - The need to obtain such information was highly important for all sectors.
  - Both the utilization and importance are highest for the retail and manufacturing market sectors.

### 2. FUNDS TRANSFER

- Initiating funds transfer electronically is, as shown in Exhibit V-2, accomplished primarily through commercial banks.
  - It is used by approximately three-quarters of the executives interviewed across all market sectors.
  - Service quality appears high but could use some improvement, particularly in the manufacturing sector.
  - When used, the function is highly important to financial executives in all sectors.

**EXHIBIT V-1**

**DELIVERY OF ACCOUNT BALANCE AND TRANSACTION DETAIL  
ELECTRONICALLY FROM BANKS, OTHER FINANCIAL INSTITUTIONS,  
AND INFORMATION SERVICES VENDORS BY MARKET SECTOR IN 1985**

MARKET SIZE	SAMPLE SIZE	FUNDS TRANSFER AND OTHER TRANSACTIONS					
		PERCENT OF RESPONDENTS				RATING	
		Commer- cial Bank	Other Fin. Inst.	Info. Serv. Vendor	Don't Know	Service Quality	Impt. Level
Retail	12	92%	-	-	8%	7.9	9.6
Utilities	13	85%	-	-	15%	8.4	9.3
Manufac- turing	23	91%	-	-	9%	8.2	9.6
All Other	26	77%	-	4%	19%	8.2	9.4
Total	74	85%	-	1%	14%	8.2	9.5

Rating: 1 = Low, 10 = High

**EXHIBIT V-2**

**ABILITY TO INITIATE ELECTRONICALLY FUNDS TRANSFER,  
FOREIGN EXCHANGE, LETTERS OF CREDIT,  
AND OTHER FINANCIAL TRANSACTIONS BY MARKET SECTOR IN 1985**

MARKET SIZE	SAMPLE SIZE	FUNDS TRANSFER AND OTHER TRANSACTIONS					
		PERCENT OF RESPONDENTS				RATING	
		Commer- cial Bank	Other Fin. Inst.	Info. Serv. Vendor	Don't Know	Service Quality	Impt. Level
Retail	12	75%	-	-	25%	8.4	9.0
Utilities	13	77%	-	-	23%	8.6	9.5
Manufac- turing	23	76%	-	-	24%	8.1	9.1
All Other	26	77%	-	4%	19%	8.3	9.6
Total	74	78%	-	1	21%	8.3	9.4

Rating: 1 = Low, 10 = High

### 3. FUNDS CONCENTRATION AND MOVEMENT

- Other financial institutions such as S&Ls, diversified financial services corporations, and brokerage houses begin to show involvement with this application. As shown in Exhibit V-3, the utilization of financial communications networks to concentrate and move funds is becoming increasingly important.
  - This function is not widely used by the utility and retail sectors.
  - However, the manufacturing and other industry groups are very active.

### 4. AUTOMATED LOCK-BOX

- Just over half of the sample interviewed currently utilize automated lock-box services, as shown in Exhibit V-4.
  - The data indicates that financial executives in the utility sector, in most instances, are the most conservative with respect to utilizing electronic financial information services.
  - Although the manufacturing sector makes greatest use of lock-box operations, service quality, while good, is rated the lowest among the sectors, indicating service improvement is in order.
  - The data indicates that room exists for greater market penetration with automated lock-box service offerings, probably through on-line delivery.

### 5. CORPORATE TRADE PAYMENTS

- The utilization of automated clearing house (ACH) to initiate and execute Corporate Trade Payments, CTPs, is very low, as shown in Exhibit V-5.

**EXHIBIT V-3**

**ABILITY TO CONCENTRATE AND MOVE FUNDS AUTOMATICALLY  
BY MARKET SECTOR IN 1985**

MARKET SIZE	SAMPLE SIZE	FUNDS TRANSFER AND OTHER TRANSACTIONS					
		PERCENT OF RESPONDENTS				RATING	
		Commer- cial Bank	Other Fin. Inst.	Info. Serv. Vendor	Don't Know	Service Quality	Impt. Level
Retail	12	25%	8%	-	67%	8.9	9.3
Utilities	13	31%	8%	-	61%	8.7	9.7
Manufac- turing	23	87%	-	-	13%	8.6	9.6
All Other	26	81%	-	-	19%	8.2	9.3
Total	74	65%	3%	-	32%	8.5	9.4

Rating: 1 = Low, 10 = High



EXHIBIT V-4

USE OF AUTOMATED LOCK-BOX SERVICES  
BY MARKET SECTOR IN 1985

MARKET SIZE	SAMPLE SIZE	FUNDS TRANSFER AND OTHER TRANSACTIONS					
		PERCENT OF RESPONDENTS				RATING	
		Commer- cial Bank	Other Fin. Inst.	Info. Serv. Vendor	Don't Know	Service Quality	Impt. Level
Retail	12	50%	-	-	50%	8.7	9.8
Utilities	13	46%	-	-	54%	8.4	9.0
Manufac- turing	23	61%	4%	-	35%	7.8	9.0
All Other	26	50%	-	-	50%	8.1	9.2
Total	74	53%	1%	-	46%	8.5	9.2

Rating: 1 = Low, 10 = High

EXHIBIT V-5

USE OF CORPORATE TRADE PAYMENTS  
BY MARKET SECTOR IN 1985

MARKET SIZE	SAMPLE SIZE	FUNDS TRANSFER AND OTHER TRANSACTIONS					
		PERCENT OF RESPONDENTS				RATING	
		Commer- cial Bank	Other Fin. Inst.	Info. Serv. Vendor	Don't Know	Service Quality	Impt. Level
Retail	12	8%	-	-	92%	8.0	8.3
Utilities	13	38%	-	-	62%	7.0	7.8
Manufac- turing	23	17%	-	-	83%	7.6	8.0
All Other	26	12%	-	-	88%	7.5	6.8
Total	74	18%	-	-	82%	7.7	7.8

Rating: 1 = Low, 10 = High

- It is utilized by far less than 20% of the sample interviewed across all sectors. Interestingly, the utilities sector reported the heaviest usage.
- It is not highly important, even to those utilizing the services.
- The quality, while good, appears to need significant improvement. Standardization of the format for CTPs and greater third-party information services vendor participation could well improve utilization of this very economical application.

## 6. PREAUTHORIZED BILL AND OTHER PAYMENTS

- The data presented in Exhibit V-6 indicates that preauthorized bill and other individual payment services are not well utilized by corporate financial executives.
  - Just over 20% of the total sample utilized these services at all.
  - Where the service was significantly used, it is highly important.
  - Service quality, while very good, indicates that additional features, such as on-line initiation of exception transactions and on-line ACH transmission, might well improve utilization.

## 7. AUTOMATED PAYROLL AND OTHER DISBURSEMENTS

- The data, as shown in Exhibit V-7, indicates that the manufacturing sector best utilizes this electronic financial information service.
  - Still, well less than half of all corporate financial executives interviewed utilized this ACH-related service.

EXHIBIT V-6

USE OF PREAUTHORIZED BILL AND OTHER INDIVIDUAL PAYMENTS  
BY MARKET SECTOR IN 1985

MARKET SIZE	SAMPLE SIZE	PREAUTHORIZED PAYMENTS					
		PERCENT OF RESPONDENTS				RATING	
		Commer- cial Bank	Other Fin. Inst.	Info. Serv. Vendor	Don't Know	Service Quality	Impt. Level
Retail	12	25%	-	-	75%	8.3	9.0
Utilities	13	31%	-	-	69%	8.0	9.5
Manufac- turing	23	13%	-	-	87%	8.0	7.3
All Other	26	23%	-	-	77%	7.8	8.4
Total	74	22%	-	-	78%	8.0	8.5

Rating: 1 = Low, 10 = High

EXHIBIT V-7

USE OF AUTOMATED PAYROLL AND OTHER DISBURSEMENTS  
BY MARKET SECTOR IN 1985

MARKET SIZE	SAMPLE SIZE	AUTOMATED DISBURSEMENTS					
		PERCENT OF RESPONDENTS				RATING	
		Commer- cial Bank	Other Fin. Inst.	Info. Serv. Vendor	Don't Know	Service Quality	Impt. Level
Retail	12	33%	-	-	67%	8.3	9.3
Utilities	13	31%	-	-	69%	8.0	8.0
Manufac- turing	23	52%	4%	-	44%	8.1	7.1
All Other	26	35%	-	-	65%	8.4	8.9
Total	74	39%	1%	-	60%	8.3	8.1

Rating: 1 = Low, 10 = High

- Service quality was reported as very good across all market sectors for this time-trusted financial information service.
- Improvements in reducing float and payroll check reconciliation should directly increase service quality and indirectly increase utilization.

## 8. ON-LINE FINANCIAL DATA BASE INFORMATION

- Other financial institutions, particularly brokerage houses and financial quotation services (i.e., Quotron, recently acquired by CITICORP), are, as shown in Exhibit V-8, the most significant providers of financial market data to corporate respondents.
  - Penetration is quite low, well under 50%, across all sectors. Given the size of the corporate respondents, this points to significant untapped market potential.
  - While both service quality and the importance level are good for those utilizing the function, improvements through information services integration (i.e., microprocessor-based workstation delivery), accuracy of information, and timeliness of delivery would significantly improve market penetration.

## 9. ON-LINE INFORMATION ON FINANCIAL CUSTODY ACCOUNTS

- This function, primarily related to commercial banks, is, as shown in Exhibit V-9, used only selectively by corporate financial officers.
  - The services are used in such areas as corporate trust, municipal bond offerings, and investment banking in the wholesale banking sector.
  - The low utilization of these services indicates the importance and service quality are tenuous across market sectors. However, it appears



EXHIBIT V-8

USE OF ON-LINE FINANCIAL DATA BASE INFORMATION  
BY MARKET SECTOR IN 1985

MARKET SIZE	SAMPLE SIZE	ON-LINE FINANCIAL DATA BASE INFORMATION			
		PERCENT OF RESPONDENTS			
		Commercial Bank	Other Financial Institutions	Information Services Vendor	Do Not Know
Retail	12	8%	25%	-	67%
Utilities	13	15%	23%	-	62%
Manufac- turing	23	17%	22%	4%	57%
All Other	26	15%	19%	-	66%
Total	74	15%	22%	1%	62%

Rating: 1 = Low, 10 = High

EXHIBIT V-9

USE OF ON-LINE INFORMATION ON FINANCIAL CUSTODY ACCOUNTS  
BY MARKET SECTOR IN 1985

MARKET SIZE	SAMPLE SIZE	ON-LINE FINANCIAL CUSTODY ACCOUNTS					
		PERCENT OF RESPONDENTS				RATING	
		Commer- cial Bank	Other Fin. Inst.	Info. Serv. Vendor	Don't Know	Service Quality	Impt. Level
Retail	12	25%	-	-	75%	9.5	6.5
Utilities	13	15%	-	-	85%	8.7	8.4
Manufac- turing	23	30%	-	-	70%	8.5	8.3
All Other	26	38%	-	-	62%	8.1	8.4
Total	74	30%	-	-	70%	8.5	8.2

Rating: 1 = Low, 10 = High

that where used, the function is important and the service quality is good.

- "If you need it, you need it," but it is one of those things that corporate financial executives try to avoid. When used, every effort is made to negotiate at least part of the captive interest earned, the corresponding float, and the loan value of the deposit multiple to commercial banks.

#### 10. OTHER FINANCIAL INFORMATION SERVICES

- Other financial information services provided to corporate financial executive respondents are as shown in Exhibit V-10.
  - Multiple responses are possible.
  - Commercial paper issuance was very important to selected corporate financial executives.
  - On-line account analysis/reconciliation received numerous mentions.
- These responses are indicative of the need for more comprehensive electronic service.

#### C. FINANCIAL INFORMATION SERVICES BUDGETS IN 1985

- Just over half of the total sample size, as shown in Exhibit V-11, reported availability of current budget information for automated financial information services.

EXHIBIT V-10

OTHER FINANCIAL INFORMATION SERVICES PROVIDED TO  
CORPORATE FINANCIAL EXECUTIVE RESPONDENTS

FINANCIAL INFORMATION SERVICE	MARKET SECTOR			
	Retail	Utilities	Manufac- turing	Other
Controlled/Zero Banking Dis- bursements	XX	XX		XX
On-Line Commercial Paper	XX	X		XX
ACH Transactions	XX	XX	XX	
Lock-Box Service	X			X
On-Line Account Analysis/Recon- ciliation	X	X	X	XX
Divided Disburse- ment/Reinvestment			X	X
Financial News Services	X		X	X

EXHIBIT V-11

**BUDGETS FOR AUTOMATED FINANCIAL INFORMATION SERVICES  
BY MARKET SECTOR FOR 1985**

BANK TYPE	SAMPLE SIZE	PERCENT OF RESPONDENTS		AVERAGE BUDGET (\$ Millions)
		Don't Know	Budget Info. Available	
Retail	12	58%	42%	\$4.1
Utilities	13	38%	62%	0.3
Manufacturing	23	39%	61%	7.6
All Others	26	50%	50%	1.8
Total	74	46%	54%	\$4.1

- While the portion of respondents reporting budgetary information does not result in very reliable data with respect to sector stratification, the data does give indication as to the relative magnitude of budgets within the reported market sectors.
  - The low amount spent by the utility sector certainly is supported by low involvement of utility corporate financial executives in services reviewed in Section B above. With the shift in petroleum prices and the rising fortunes of public utilities, this market represents an untapped potential for corporate financial information services offerings.
  - The amount currently being spent in the manufacturing sector, an average of \$8 million annually, sharply illustrates that Fortune 500 corporations (99% of the data sample) spend significant sums on computer information services beyond that normally reported in MIS/DP budgets.

#### D. BUYING PREFERENCES

- There is little doubt, as shown in Exhibit V-12, that Fortune 500 corporate financial executives prefer to obtain financial information services primarily from money center and, to a lesser extent, regional banks.
  - It is significantly more important that the services be obtained from money center and regional banks than from other sources.
  - The data certainly indicates that computer services vendors will find the best opportunities through private label and other third-party relationships with the country's top 300 commercial banks.



EXHIBIT V-12

**PREFERENCE FOR OBTAINING FINANCIAL SERVICES  
AS REPORTED BY CORPORATE FINANCIAL EXECUTIVES  
BY MARKET SECTOR IN 1985**

MARKET SECTOR	SAMPLE SIZE	PREFERENCES FOR OBTAINING FINANCIAL SERVICES									
		Money Center Bank		Regional Bank		Commercial Bank		Other		Joint Ventures PC/IS	
		Portion of Resp.	Impt. Level 1-10*	Portion of Resp.	Impt. Level 1-10	Portion of Resp.	Impt. Level 1-10	Portion of Resp.	Impt. Level 1-10	Portion of Resp.	Impt. Level 1-10
Retail	12	100%	8.1	92%	7.5	92%	4.6	92%	4.4	83%	4.0
Utilities	13	92%	8.3	77%	8.4	69%	5.2	54%	3.3	46%	3.7
Manufac- turing	23	100%	8.7	78%	7.2	65%	3.3	65%	6.0	78%	5.6
All Others	26	96%	7.6	92%	7.7	88%	4.8	85%	4.8	81%	3.4
Total	74	97%	8.1	85%	7.6	78%	4.5	73%	4.8	76%	4.2

## E. PAYMENT PREFERENCES

### I. CURRENT SERVICES

- Corporate financial executives are becoming increasingly more sensitive to fee delineation with respect to obtaining financial information services from commercial banks, as shown in Exhibit V-13.
- Bundling the price with other services is viewed as unimportant and of significantly lower preference to direct fee or fee imputed from compensating balances.
  - Corporate financial executives across all sectors believe it is much more important to utilize the fee base structure on an arms-length basis, decoupling fees from compensating balances.
  - The data should be viewed as an opportunity for computer services vendors to make successful private label and other third-party arrangements for delivering financial information services between the commercial banking sector and corporate financial executives.

### 2. ADDITIONAL SERVICES

- Corporate financial executives show little interest in paying for more accurate financial information services data, as shown in Exhibit V-14. They hold the vendor, bank, other financial institution, or information services vendor responsible for ensuring data accuracy.
- The willingness of utility corporate financial executives to pay for the selected services confirms their low level of interaction with automated financial information services.

EXHIBIT V-13

PREFERENCE FOR PAYMENT OF WHOLESALE  
BANKING INFORMATION SERVICES  
AS REPORTED BY CORPORATE FINANCIAL EXECUTIVES  
BY MARKET SECTOR IN 1985

MARKET SIZE	SAMPLE SIZE	PAYMENT PREFERENCE					
		FEES		COMPENSATING BALANCES		PRICE WITH OTHER SERVICES	
		Portion of Resp.	Import. Level 1-10*	Portion of Resp.	Import. Level 1-10*	Portion of Resp.	Import. Level 1-10*
Retail	12	92%	8.5	92%	3.7	83%	1.7
Utilities	13	85%	9.5	69%	6.8	46%	2.0
Manufac- turing	23	83%	9.0	70%	4.1	52%	1.7
All Other	26	92%	9.1	96%	5.1	69%	2.3
Total	74	88%	9.1	82%	4.8	62%	2.0

Rating: 1 = Low, 10 = High

**EXHIBIT V-14**

**WILLINGNESS OF CORPORATE FINANCIAL EXECUTIVES  
TO PAY FOR SELECTED WHOLESALE FINANCIAL INFORMATION SERVICES  
BY MARKET SECTOR IN 1985**

<b>MARKET SECTOR</b>	<b>SAMPLE SIZE</b>	<b>WILLINGNESS TO PAY FOR SELECTED WHOLESALE INFO SERVICES (Portion of respondents)</b>			
		<b>More Information</b>	<b>More Accurate Information</b>	<b>More Support</b>	<b>More Timely Data</b>
<b>Retail</b>	<b>12</b>	<b>50%</b>	<b>17%</b>	<b>75%</b>	<b>75%</b>
<b>Utilities</b>	<b>13</b>	<b>23%</b>	<b>8%</b>	<b>8%</b>	<b>8%</b>
<b>Manufacturing</b>	<b>23</b>	<b>39%</b>	<b>26%</b>	<b>43%</b>	<b>48%</b>
<b>All Others</b>	<b>26</b>	<b>54%</b>	<b>31%</b>	<b>42%</b>	<b>50%</b>
<b>Total</b>	<b>74</b>	<b>43%</b>	<b>23%</b>	<b>41%</b>	<b>45%</b>

- The data suggests that corporate financial executives in the retail sector need electronic information services that provide them with better support and services delivered in a more timely manner.
  - Opportunities exist for providing information services on a national basis that involve multi-bank operations, accelerated cash receipt (i.e., lock-box), funds concentration and reporting, and other on-line financial information services.
  - Retail could be the perfect sector for vendor concentration since retailers and vendors are potential allies in developing financial services offerings. Further, retailers are now participating in the banking and financial markets as nonbank banks.
- The fact that less than half of all corporate financial executives are willing to pay for the selected additional functions suggests significant room for improvement in functionality in financial information services offerings. Notably, the data shows the retail sector wants more services.

## F. CORPORATE FINANCIAL EXECUTIVE SATISFACTION

### I. CURRENT SERVICES

- The data presented in Exhibit V-15 suggests that corporate financial executives are only moderately satisfied with current financial information services product/services offerings.
  - Training is sore spot across all but the retail sector, where it is judged just better than satisfactory.

EXHIBIT V-15

LEVEL OF SATISFACTION WITH FINANCIAL INFORMATION  
SERVICES CONTRACT PERSONNEL AS REPORTED BY  
CORPORATE FINANCIAL EXECUTIVES  
BY MARKET SECTOR IN 1985

BANK TYPE	SAMPLE SIZE	MARKETING CONTRACT PERSONNEL (Level of Satisfaction*)				
		Knowledge- able Service	Ability to Solve Problems	Respon- siveness	Training Methods	Willingness to Handle Spec. Requests
Retail	12	6.7	5.2	7.2	6.8	7.8
Utility	13	7.4	6.8	8.3	6.1	7.9
Manufacturing	23	6.4	6.0	6.9	5.7	7.6
All Others	26	7.1	6.6	7.4	5.9	7.5
Total	74	6.9	6.2	7.4	5.9	7.7

Satisfaction: 1 = Low, 10 = High



- The highest level of satisfaction with respect to willingness to handle special requests, itself only moderate, suggests that information services vendors are still in the process of evolving financial information services products/services offerings.
- The barely acceptable level of satisfaction across all market sectors with respect to the ability of the services offered to solve corporate financial executives' problems suggests that teaming arrangements with professional services vendors offering implementation services should be a successful market opportunity.
- The general level of satisfaction with financial information services support personnel is, as shown in Exhibit V-16, just satisfactory.
  - The lack of variation in the stratified data as well as between the selected items tested suggests that corporate financial executives do not significantly differentiate between offerers' marketing and support personnel.
  - The data suggest that vendors must, in addition to providing new functionality, significantly improve the quality of current financial information services product offerings, in particular service and support.

## 2. MOST SIGNIFICANT PROBLEMS

- The 12 most significant problems with financial information systems/services are summarized in Exhibit V-17.
  - The items are reported by executives in more than one market sector.
  - The most serious problems have been reported by multiple executives in more than one market sector.

**EXHIBIT V-16**

**LEVEL OF SATISFACTION WITH FINANCIAL INFORMATION  
SERVICES SUPPORT PERSONNEL AS REPORTED  
BY CORPORATE FINANCIAL EXECUTIVES  
BY MARKET SECTOR IN 1985**

<b>BANK TYPE</b>	<b>SAMPLE SIZE</b>	<b>SUPPORT PERSONNEL (Level of Satisfaction*)</b>				
		<b>Knowledge- able Service</b>	<b>Ability to Solve Problems</b>	<b>Respon- siveness</b>	<b>Training Methods</b>	<b>Willingness to Handle Spec. Requests</b>
<b>Retail</b>	<b>12</b>	<b>7.1</b>	<b>7.1</b>	<b>6.7</b>	<b>6.6</b>	<b>6.8</b>
<b>Utility</b>	<b>13</b>	<b>7.4</b>	<b>7.5</b>	<b>7.4</b>	<b>6.9</b>	<b>7.8</b>
<b>Manufacturing</b>	<b>23</b>	<b>7.4</b>	<b>7.1</b>	<b>6.1</b>	<b>7.1</b>	<b>7.0</b>
<b>All Others</b>	<b>26</b>	<b>7.5</b>	<b>7.7</b>	<b>7.7</b>	<b>7.7</b>	<b>7.3</b>
<b>Total</b>	<b>74</b>	<b>7.4</b>	<b>7.4</b>	<b>7.3</b>	<b>7.3</b>	<b>7.2</b>

Satisfaction: 1 = Low, 10 = High

EXHIBIT V-17

**MOST SIGNIFICANT PROBLEMS WITH FINANCIAL INFORMATION  
SYSTEMS/SERVICES AS REPORTED BY  
CORPORATE FINANCIAL EXECUTIVE RESPONDENTS**

PROBLEM	MARKET SECTOR			
	Retail	Utilities	Manufacturing	Other
Unacceptable System Reliability	XX	X	XX	X
Poor Response Time	X	X	XX	XX
Third-Party Vendor Too Costly	X			X
Moderate Corporate Financial Information Security		X	X	X
Inadequate On-Line Interaction	X		XX	XX
Restrictive Federal Reserve Bank Clearance/Windows		X	X	
Inadequate Backup/Recovery		X	X	X
Inadequate Lock-Box Collection Information	X	X	XX	X
Inaccurate Financial Reporting Information	X	X	XX	XX
Legal Responsibility for Mistakes	X		X	
Inadequate Flexibility to Accomplish Exceptions		X	X	
Inadequate Security on Funds Transfer			XX	X

X = Single Respondent; XX = Multiple Respondents

- Many executives report unacceptable system reliability, where the on-line system is down when needed more than once a week.
- A significant number of executives report unacceptable problems in accessing contracted financial information services. Unacceptable response time was also a problem.
- While a problem, security for both corporate financial information and funds transfer was not high on the list of the most important problems in the minds of corporate financial executives.
- The general inadequacy of backup/recovery procedures could indicate an opportunity for adding this additional service to vendor product offerings.
- Financial executives not only want electronic financial information services, but they cite the inability to operate in an on-line "real time" environment as seriously impairing the usefulness of financial information services product offerings.
- Most of these problem areas are indicative of poor market leadership by current suppliers. They also demonstrate significant opportunity for a strong vendor to "take over" the market.

## G. FUTURE REQUIREMENTS

### I. SELECTED WHOLESALE BANKING FINANCIAL INFORMATION SERVICES

- Although a significant portion of corporate financial executives felt the selected services were needed, the data across all market sectors suggest that the services are not highly important.

- The need for improved/additional wholesale banking information services is summarized in Exhibit V-18.
  - Corporate financial executives in the utility, manufacturing, and other sectors were most interested in improving the DP interfaces (computer-to-computer and computer-to-treasury workstation) between the service offerer and the end user.
  - The data with respect to security suggests an uneasy awareness that each corporate financial executive respondent is concerned about being involved in some sensational news event involving corporate funds transfer or privacy of corporate financial information.
  - Improvement in the timeliness (responsiveness) of financial information availability and reporting is seen as both important and needed.

## 2. OTHER FINANCIAL INFORMATION SERVICES SOUGHT

- A summary of the additional financial information services sought by corporate financial executives across market sectors is shown in Exhibit V-19.
  - The information highlights the current lack of involvement by utility corporate financial executives in electronic financial information services. The market appears to be ripe for marketing of such services to these executives.
  - International cash management and integrated treasury workstations stand high on the lists of financial executives across three of the four sectors analyzed.
  - The number of additional information services sought (17) is indicative of the growing importance of the wholesale financial information services marketplace.

EXHIBIT V-18

**NEED FOR IMPROVED/ADDITIONAL  
WHOLESALE BANKING INFORMATION SERVICE  
BY BANK TYPE IN 1985**

MARKET SIZE	SAMPLE SIZE	PAYMENT PREFERENCE							
		MERCHANT BANKING		CREDIT INSTITUTION		IMPROVED INFORMATION TIMELINES		IMPROVED DP INTERFACES	
		Portion of Resp.	Import. Level 1-10*	Portion of Resp.	Import. Level 1-10*	Portion of Resp.	Import. Level 1-10*	Portion of Resp.	Import. Level 1-10*
Retail	12	92%	1.6	100%	2.2	92%	4.8	92%	3.7
Utilities	13	46%	1.0	54%	2.2	54%	2.3	62%	5.0
Manufac- turing	23	65%	1.0	48%	3.3	65%	5.5	65%	7.2
All Other	26	49%	2.0	73%	2.6	92%	6.1	92%	6.0
Total	74	69%	1.4	66%	2.6	77%	5.2	78%	5.7

Rating: 1 = Low, 10 = High



**EXHIBIT V-18 (Cont.)**

**NEED FOR IMPROVED/ADDITIONAL  
WHOLESALE BANKING INFORMATION SERVICES  
BY BANK TYPE IN 1985**

MARKET SIZE	SAMPLE SIZE	IMPROVED/ADDITIONAL WHOLESALE BANKING INFORMATION SERVICES					
		BROADER ARRAY OF DATA BASES		DATA FUNDS TRANSFER		SECURITY PRIVACY	
		Portion of Resp.	Import. Level 1-10*	Portion of Resp.	Import. Level 1-10*	Portion of Resp.	Import. Level 1-10*
Retail	12	83%	1.9	83%	2.9	83%	2.0
Utilities	13	46%	3.0	77%	5.6	69%	6.7
Manufac- turing	23	52%	4.7	65%	6.1	52%	5.2
All Other	26	81%	2.6	81%	5.4	85%	3.4
Total	74	66%	3.0	81%	5.2	72%	4.1

Rating: 1 = Low, 10 = High

EXHIBIT V-19

ADDITIONAL FINANCIAL INFORMATION SERVICES SOUGHT  
BY CORPORATE FINANCIAL EXECUTIVE RESPONDENTS

PROBLEM	MARKET SECTOR			
	Retail	Utilities	Manufacturing	Other
International Cash Management	X		XX	XX
Risk Analysis	X		X	X
Professional Services	X			
Consolidation of Deposits in All Banks	X			
Consolidation of Intercompany Loans	X			
Cash Forecasting	X			
Disaster Recovery/ Backup		X		
On-Line Information on Lock-Box Collections			X	
Financial Market Instrument Rates			X	
Daylight Overdraft Tracking			X	
On-Line Account Analysis			X	
Integrated Treasury Workstations	X		XX	XX
On-Line Integrated Financial Information Management	X		X	X
On-Line ARC for Payroll/ DB Bursements			X	X
Credit Analysis	X		X	X
Standardized Corporate Trade Payments			X	
Merger Acquisition Analysis			X	

X = Single Respondent; XX = Multiple Respondents

### 3. EXPECTATIONS FOR ON-LINE/REAL TIME FINANCIAL INFORMATION SERVICES

- As shown in Exhibit V-20, over 80% of total corporate financial executive respondents expect increased on-line information systems interaction with financial institutions.
  - The data suggests that enhanced functionality will likely find a receptive future market for advanced financial information services offerings.
  - Expectations for the utility sector, somewhat lower than for the other three, are still high enough to indicate growing interest in electronic financial information services.
- Applicational areas where corporate financial executives expect increased on-line interaction are shown in Exhibit V-21.
  - Executives across all market sectors are looking for greater on-line interaction for the basic treasury functions of funds transfer, funds concentration and disbursement, and general cash management.
  - Expectations are also high to improve on-line interaction with respect to automated clearing house (ACH) operations for payroll and particularly corporate trade payments (electronic data interchange standardization).
  - Other applications high on corporate financial executives' wish lists are cash forecasting, account analysis, and the ever-hoped-for on-line integrated treasury workstations.

EXHIBIT V-20

**FUTURE EXPECTATIONS FOR INCREASED ON-LINE FINANCIAL INFORMATION  
SERVICES INTERACTION WITH FINANCIAL INSTITUTIONS AS REPORTED  
BY CORPORATE FINANCIAL EXECUTIVES  
BY MARKET SECTOR IN 1985**

<b>BANK TYPE</b>	<b>SAMPLE SIZE</b>	<b>PERCENT OF RESPONDENTS</b>
<b>Retail</b>	<b>12</b>	<b>83%</b>
<b>Utilities</b>	<b>13</b>	<b>77%</b>
<b>Manufacturing</b>	<b>23</b>	<b>83%</b>
<b>All Others</b>	<b>26</b>	<b>81%</b>
<b>Total</b>	<b>74</b>	<b>81%</b>

EXHIBIT V-21

APPLICATIONS FOR INCREASED ON-LINE FINANCIAL INFORMATION  
SERVICES INTERACTION WITH COMMERCIAL BANKS  
AS REPORTED BY CORPORATE FINANCIAL EXECUTIVE RESPONDENTS

PROBLEM	MARKET SECTOR			
	Retail	Utilities	Manufac- turing	Other
ACH, Payroll and Deposits/Trade Payments	X	XX		XX
Funds Transfer/ Concentration/Cash Management	XX	XX	XX	XX
On-Line/Real Time Account Mangement	XX		XX	XX
On-Line Cash Fore- casting and Invest- ment Analysis	X	XX	XX	X
Multi-bank Financial Interaction Reporting			XX	XX
Commercial Paper Transactions		XX		XX
On-Line Integrated Treasury Workstations		X	XX	XX
On-Line Lock-Box Analysis/Reporting	X		X	
International Financial Instruments/Foreign Exchange			XX	X
Controlled Disburse- ments	X		X	XX
International Cash/Funds Management			X	XX

X = Single Respondent; XX = Multiple Respondents

#### 4. REQUIREMENTS FOR PERSONAL COMPUTER OFFERINGS

- Corporate financial executives appear most interested in a greater variety of service offerings. They are interested in reducing the number of specialized terminals and being able to access a wide variety of services from an as-necessary enhanced personal computer.
- The data suggests that corporate financial executives expect vendors to come to them with new and improved services offerings as contrasted to corporate financial executives themselves taking a leading role in stimulating the marketplace.
- The consistently high level of importance of the selected features to the utility sector suggest an awakening interest in utilizing electronic financial information services offerings.



## VI WHOLESALE BANKING REQUIREMENTS ANALYSIS



## VI WHOLESALE BANKING REQUIREMENTS ANALYSIS

### A. INTRODUCTION

- The analysis that follows is based upon the 89 commercial bank MIS/DP executive interviews and 104 marketing/planning executive interviews shown in Exhibits I-4 and I-5.
- The analysis, where applicable and practical, presents the interview data in normalized form such that the net results sum to 100%.
- The data was stratified by bank type according to deposit size, as was shown in Exhibit I-2. The bank type stratification selected was:
  - Money center banks.
  - Regional banks.
  - Large independent banks.
  - Independent banks.
- A significant portion (47%) of the interviews were with regional banks, as shown in Exhibit VI-I.

EXHIBIT VI-1

AVERAGE DEPOSITS BY BANK TYPE IN 1985

BANK TYPE	SAMPLE SIZE		AVERAGE DEPOSITS IN 1985
	Mkt/Plan	MIS/DP	
Independent	31	17	\$216 M
Large Independent	26	19	\$1.3 B
Regional	42	48	\$6.7 B
Money Center	5	5	\$40.0 B
Total	104	89	\$4.6 B

- Enough interviews were obtained for each bank type to make the data analysis meaningful.
- It is estimated that the nearly 200 interviews represent approximately 150 banks, with deposits approaching 40% of the 1985 total commercial bank deposits.
- The analysis that is presented below considers, where appropriate, all commercial bank lines-of-business and then focuses on the wholesale banking segment in this volume.
- For a complete analysis of commercial banks' financial information services requirements see Volume III, Information System Requirements in Commercial Banking.

## **B. MIS/DP EXPENDITURES**

### **I. MIS/DP BUDGETS**

- Nearly 90 banks in the total sample, as shown in Exhibit VI-2, spent on an average over \$15 million dollars annually on MIS/DP operations in 1985.
  - The top 300 banks spent on average \$6.3 billion for MIS/DP operations. Perhaps another 20%, or \$1.3 billion, represent expenditures not within the control of MIS/DP executives, resulting in total information systems expenditures exceeding \$7.5 billion.
  - Information services expenditures for the top 300 banks, extrapolated from the data sample, approached \$2 billion, over 50% of the total expenditures by commercial banks.

EXHIBIT VI-2

AVERAGE MIS/DP BUDGETS BY BANK TYPE IN 1985

BANK TYPE	SAMPLE SIZE	AVERAGE MIS/DP BUDGETS (\$ Millions)
Independent	17	\$ 1
Large Independent	19	\$11
Regional	48	\$20
Money Center	5	\$55
Total	89	\$16



- Applying the data with respect to average MIS/DP budgets with that of average deposits for the interview sample indicates that on average commercial banks spend nearly \$3,500 per \$1 million of deposits on information system automation. Economies of scale among the 300 banks are graphic.
  - Money center banks spend less than \$1,500 per \$1 million deposits.
  - Regional banks spend an average of \$3,000 per \$1 million deposits annually.
  - Large independent banks spend in excess of \$8,000 per \$1 million deposits annually.

## 2. LINE-OF-BUSINESS EXPENDITURES

- Retail services utilizes the largest portion of MIS/DP budgets for all bank types, as shown in Exhibit VI-3.
  - The four lines-of-business comprising wholesale banking--corporate, corporate trust, international banking, and business services--represent a significant portion (at least 40%) of total expenditures.
  - The portion is even higher (at least 50%) for the larger regional and money center banks.
  - The data certainly indicates that information services vendors need to target wholesale financial information services to the top 100 commercial banks.

## 3. INFORMATION SERVICES EXPENDITURES

- Commercial banks as a group in the interview sample spend an average of over 25% of their total MIS/DP budgets on computer services. The smaller

## EXHIBIT VI-3

**DISTRIBUTION OF PLANNED MIS/DP BUDGETS FOR COMMERCIAL BANKING SERVICES  
BY BANK TYPE FOR 1985**

BANK TYPE	SAMPLE SIZE	MAJOR COMMERCIAL BANK FUNCTIONS						
		AVERAGE PORTION OF MIS/DP BUDGETS (Percent)						
		Corporate Services	Retail Services	Card Products and Services	Trust Services	International Banking Services	Administrative Services	Business Services
Independent	17	19%	41%	8%	8%	4%	11%	9%
Large Independent	19	16%	41%	16%	11%	4%	10%	2%
Regional	48	18%	28%	13%	8%	10%	9%	14%
Money Center	5	21%	22%	6%	19%	11%	8%	13%
Total	89	18%	31%	13%	9%	7%	9%	13%
								100%

banks, as shown in Exhibit VI-4, spend over 30% of their total budgets on these services.

- Applying the data from the interview sample to the top 300 banks results in total computer services expenditures in excess of \$2 billion for 1985.
- It is easy to see from data shown in Exhibit VI-5 that independent banks spend the majority of their computer services dollar for remote computing services. As was previously shown, the information services were in large part related to the retail product line.
  - The remote computing services portion sharply decrease for money center banks as the emphasis shifts to software products.
  - The growing importance of communications networks to the top 300 banks (large, independent, regional, and money center) is clearly evident, ranging from 13% to 16% of total budgets in the interview sample.

## C. PRODUCT PLANNING/DEVELOPMENT

### I. LINE-OF-BUSINESS DEVELOPMENT

- It is evident from the data presented in Exhibit VI-6 that commercial banks are heavily involved in upgrading and restructuring information services to support their line-of-business operations.
  - Major restructuring of commercial bank asset portfolios is well under way. The larger banks are shifting to merchant banking where commercial loans are initiated, packaged, and then sold as participations by smaller banks, pension funds, and foreign investors.

EXHIBIT VI-4

AVERAGE PORTION OF MIS/DP BUDGETS USED  
FOR VENDOR INFORMATION SERVICES  
BY BANK TYPE FROM 1986-1990

BANK TYPE	SAMPLE SIZE	I.S. VENDOR PORTION OF MIS/DP BUDGET
Independent	17	32%
Large Independent	19	29%
Regional	48	23%
Money Center	5	17%
Total	89	26%

**EXHIBIT VI-5**

**DISTRIBUTION OF PLANNED MIS/DP BUDGETS FOR  
VENDOR-SUPPORTED INFORMATION SERVICES  
BY BANK TYPE FOR 1985**

BANK TYPE	SAMPLE SIZE	VENDOR SUPPLIED SERVICES AVERAGE PORTION OF MIS/DP BUDGETS								
		Soft-ware	RCS	Turnkey Systems	Prof. Services	Data Base Services	Facilities Mgt.	Bank Card Services	Other	Total
Independent	17	15%	49%	2%	7%	1%	12%	3%	11%	100%
Large Independent	19	17%	27%	3%	10%	10%	16%	8%	9%	100%
Regional	48	20%	40%	3%	9%	2%	13%	3%	10%	100%
Money Center	5	24%	17%	4%	7%	13%	16%	10%	9%	100%
Total	89	19%	34%	3%	8%	5%	13%	7%	11%	100%

EXHIBIT VI-6

CURRENT/PLANNED IMPLEMENTATION OF  
MAJOR MIS/DP INFORMATION SYSTEMS  
BY BANK TYPE IN 1985

MAJOR MIS/DP INFORMATION SYSTEMS										
		PERCENT OF RESPONDENTS								
BANK TYPE	SAMPLE SIZE	Commercial Loans	Demand Deposit Accounting	Card Products/ Services	Trust Services	International Branch	Cash Management	Electronic Funds Transfer	Data Processing	Electronic Data Interchange
Independent	17	88%	94%	47%	53%	12%	47%	71%	47%	24%
Large Independent	19	79%	53%	47%	74%	53%	58%	58%	42%	53%
Regional	48	81%	79%	73%	73%	75%	83%	77%	71%	65%
Money Center	5	80%	80%	60%	80%	80%	60%	80%	100%	80%
Total	89	82%	76%	62%	70%	58%	70%	72%	62%	55%



**CURRENT/PLANNED IMPLEMENTATION OF  
MAJOR MIS/DP INFORMATION SYSTEMS  
BY BANK TYPE IN 1985**

MAJOR MIS/DP INFORMATION SYSTEMS		PERCENT OF RESPONDENTS								
BANK TYPE	SAMPLE SIZE	Customer Profitability	Customer Information File	ATM/POS	Data Security	Distributed Data Processing	Office Automation	Personal Computers	Data Communication Networks	Other
Independent	17	47%	65%	71%	35%	24%	35%	65%	24%	-
Large Independent	19	53%	53%	74%	63%	47%	89%	58%	53%	11%
Regional	48	81%	65%	19%	83%	73%	85%	83%	83%	8%
Money Center	5	80%	80%	80%	80%	80%	80%	60%	80%	-
Total	89	69%	63%	76%	70%	58%	71%	73%	65%	4%

- Integration of demand deposit accounting (DDA) through centralized customer information files (CIF) with commercial lending, international banking, and other business lines is proceeding under the concept of "relationship banking."
- The high involvement of regional and money center banks in the international banking arena is highlighted in the interview sample.
- The heavy involvement in bank card (ATM) systems for all four bank types highlights the growing importance of shared networks in the commercial banking marketplace.

## 2. WHOLESALE BANKING APPLICATIONS

- The data presented in Exhibit VI-7 suggests that tailoring cash management services toward middle market (Fortune 2000) companies is more important to banks across the stratified sample than expanding service offerings to Fortune 500 companies. It is likely that all Fortune 500 companies already utilize electronic cash management services of primarily money center and regional banks.
- It is likely that the inability of hardware and software vendors to deliver a cost-effective integrated treasury workstation accounts for the low planned interest expressed by the larger banks in the interview sample, as shown in Exhibit VI-8.
- Commercial bankers, although they at times foster the development of technology early on (e.g., Citicorp and Security Pacific), are more likely to respond to products/services offered by hardware/software vendors.
- The high priority assigned to middle market loan information services products for all bank types, as shown in Exhibit VI-9, indicates the importance for tailoring wholesale loan services to Fortune 2000 companies.

EXHIBIT VI-7

PLANNING/DEVELOPMENT PRIORITY FOR  
CORPORATE CASH MANAGEMENT INFORMATION SERVICES ACCOUNTING  
BY BANK TYPE IN 1985

BANK TYPE	CASH MANAGEMENT INFORMATION SERVICES									
	PLANNING/DEVELOPMENT PRIORITY									
	LARGE CORPORATE					MIDDLE MARKET				
	Sample Size	High	Med.	Low	Don't Know	Sample Size	High	Med.	Low	Don't Know
Independent	11	18%	55%	18%	9%	16	44%	25%	6%	25%
Large Independent	10	20%	20%	30%	30%	17	47%	29%	6%	18%
Regional	29	31%	45%	3%	21%	30	53%	17%	7%	23%
Money Center	4	25%	50%	25%	-	4	50%	25%	25%	-
Total	54	26%	43%	12%	19%	67	49%	22%	7%	22%

EXHIBIT VI-8

PLANNING/DEVELOPMENT PRIORITY FOR  
CORPORATE TREASURY WORKSTATIONS  
BY BANK TYPE IN 1985

BANK TYPE	SAMPLE SIZE	TREASUREY WORKSTATIONS			
		High Priority	Medium Priority	Low Priority	Don't Know
Independent	5	40%	20%	40%	-
Large Independent	8	13%	37%	37%	13%
Regional	22	9%	50%	18%	23%
Money Center	5	40%	40%	20%	-
Total	40	18%	42%	25%	15%

EXHIBIT VI-9

PLANNING/DEVELOPMENT PRIORITY FOR  
CORPORATE MIDDLE MARKET LOAN INFORMATION SERVICES PRODUCTS  
BY BANK TYPE IN 1985

BANK TYPE	SAMPLE SIZE	LOAN PRODUCTS			
		High Priority	Medium Priority	Low Priority	Don't Know
Independent	16	44%	20%	5%	31%
Large Independent	15	73%	-	-	27%
Regional	24	63%	17%	3%	17%
Money Center	4	50%	25%	25%	-
Total	59	58%	14%	6%	22%

- This is particularly true for the 300 largest banks. The data suggests a probable opportunity for both software product and professional services vendors in offerings which permit flexibility and a degree of tailoring to specific market segments.
- The data, as shown in Exhibit VI-10, indicates that there is a moderate degree of interest among larger (large independent, regional, and money center) banks in upgrading line-of-credit information services for companies below the Fortune 2000 level.
  - Of the total sample size, 65% (104) were interested in line-of-credit information services.
  - Another 25% of those responding indicated that no attention had been focused on upgrading line of credit information services for small companies.
- Upgrading or expanding electronic bank products received lukewarm reception by the interview sample. The data, as presented in Exhibit VI-11, indicates that:
  - For those bank planning executives responding (64%), just over half assigned a high priority for upgrading/expanding EFT services.
  - ACH ranked second by being rated high by 33% of those responding.
  - Just over a 33% of marketing/planning executives responded to the priority for electronic corporate trade payments, and less than 20% of those responding place the item high in their planning priorities. INPUT believes that bank planning executives are waiting for a breakthrough to the standardization process with respect to electronic data interchange (EDI).



EXHIBIT VI-10

PLANNING/DEVELOPMENT PRIORITY FOR  
SMALL COMPANIES' LINE OF CREDIT INFORMATION SERVICES  
PRODUCTS  
BY BANK TYPE IN 1985

BANK TYPE	SAMPLE SIZE	LINE OF CREDIT PRODUCTS			
		High Priority	Medium Priority	Low Priority	Don't Know
Independent	25	48%	6%	-	36%
Large Independent	13	31%	46%	-	23%
Regional	26	54%	27%	-	19%
Money Center	4	50%	25%	25%	-
Total	68	47%	26%	2%	25%

## EXHIBIT VI-11

**PLANNING/DEVELOPMENT PRIORITY FOR  
CORPORATE ELECTRONIC BANKING INFORMATION SERVICES PRODUCTS  
BY BANK TYPE IN 1985**

BANK TYPE	CORPORATE ELECTRONIC BANKING PRODUCTIVITY														
	PLANNING DEVELOPMENT PRIORITY														
	Electronic Funds Transfer					Automated Clearing House					Corporate Trade Payments				
	Sample Size	High	Med.	Low	Don't Know	Sample Size	High	Med.	Low	Don't Know	Sample Size	High	Med.	Low	Don't Know
Independent	18	33%	39%	6%	22%	18	33%	22%	12%	33%	8	12%	25%	63%	-
Large Independent	20	85%	15%	-	-	13	31%	46%	-	23%	9	22%	44%	22%	12%
Regional	24	38%	33%	8%	21%	25	40%	40%	8%	12%	18	17%	28%	44%	11%
Money Center	5	40%	40%	20%	-	5	40%	40%	20%	-	4	25%	50%	25%	-
Total	67	51%	30%	6%	13%	61	36%	36%	8%	20%	39	18%	33%	41%	8%

- As shown in Exhibit VI-12, just over half of marketing/planning executives were considering planning/development priorities for selected areas of corporate trust.
  - Bank corporate trust operations are generally at arm's length from other banks' lines-of business. The situation is slowly changing (within the limitations of federal laws/regulations) as all customer services are integrated under the concept of "relationship banking."
  - The data indicates that the top 300 banks are somewhat more interested in upgrading and expanding investment options as opposed to further automation of the tax preparation process.
  - Major changes to corporate tax law will undoubtedly create considerable demand for revised and expanded corporate trust tax preparation services.
- As shown in Exhibit VI-13, not much interest was generated on the part of bank planning officers of smaller banks with respect to providing cash management services for international banking. Just over 25% of those interviewed had considered international cash management services in a planning sense.
- International cash management services are offered primarily by money center and the largest regional (less than 30) banks.

EXHIBIT VI-12

PLANNING/DEVELOPMENT PRIORITY FOR  
TRUST INFORMATION SERVICES PRODUCTS  
BY BANK TYPE IN 1985

BANK TYPE	TRUST INFORMATION SERVICES									
	PLANNING/DEVELOPMENT PRIORITY									
	LARGE CORPORATE					MIDDLE MARKET				
	Sample Size	High	Med.	Low	Don't Know	Sample Size	High	Med.	Low	Don't Know
Independent	12	33%	17%	33%	17%	16	32%	32%	11%	25%
Large Independent	13	15%	32%	15%	38%	16	43%	32%	-	25%
Regional	22	14%	41%	18%	27%	25	36%	40%	-	24%
Money Center	4	25%	50%	28%	-	3	33%	67%	-	-
Total	51	20%	33%	22%	25%	60	37%	37%	3%	23%

EXHIBIT VI-13

PLANNING/DEVELOPMENT PRIORITY FOR  
INTERNATIONAL BANKING CASH MANAGEMENT SERVICES  
BY BANK TYPE IN 1985

BANK TYPE	SAMPLE SIZE	INTERNATIONAL CASH MANAGEMENT			
		High Priority	Medium Priority	Low Priority	Don't Know
Independent	4	25%	50%	25%	-
Large Independent	3	33%	34%	-	33%
Regional	16	31%	44%	6%	19%
Money Center	4	50%	25%	25%	-
Total	27	33%	41%	11%	15%

## D. FORCES INFLUENCING PRODUCT DEVELOPMENT

### I. INNOVATION

- Executives in the interview sample were "with it," as shown in Exhibit VI-14, in adopting new information services technology for line-of-business operations.
  - The data also indicates the use of that innovation increases with bank size.
  - The data indicates that the top 100 (money center and regional) banks are likely to be the first target of opportunity for advanced wholesale banking products/services.

### 2. TECHNOLOGY

- Marketing/planning executives in the largest 100 banks, as shown in Exhibit VI-15, indicate that technology is important, but not overriding, in achieving business goals.
  - Technology is where the sizzle is at for the smaller banks, probably due to the perceived "me too" syndrome.
  - The data suggests that vendors will find a more interested audience for products offering solutions employing advanced technology than for technology per se.
- Software and communications are, as shown in Exhibit VI-16, considerably more important than "iron" to command bank MIS/DP executives' attention.



EXHIBIT VI-14

INNOVATION IN ADOPTING NEW TECHNOLOGY  
AS REPORTED BY MIS/DP EXECUTIVES  
BY BANK TYPE IN 1985

BANK TYPE	SAMPLE SIZE	PERCENT OF RESPONDENTS
Independent	17	47%
Large Independent	19	58%
Regional	48	77%
Money Center	5	100%
Total	89	69%

EXHIBIT VI-15

IMPORTANCE OF TECHNOLOGY IN ACHIEVING BUSINESS GOALS  
AS REPORTED BY MARKET/PLANNING RESPONDENTS  
BY BANK TYPE IN 1985

BANK TYPE	SAMPLE SIZE	IMPORTANCE (1 = Unimportant 10 = Most Important)
Independent	31	7.5
Large Independent	26	8.7
Regional	42	7.0
Money Center	5	7.0
Total	104	7.6

EXHIBIT VI-16

TECHNOLOGY CAPABILITIES CONSIDERED MOST IMPORTANT  
FOR ACHIEVING BANKS GOALS AND OBJECTIVES  
BY BANK TYPE IN 1985

BANK TYPE	SAMPLE SIZE	TECHNOLOGICAL CAPABILITIES (Percent of Respondents)				
		Hardware	Software	Communi- cations	Office Systems	Other
Independent	17	35%	82%	70%	24%	-
Large Independent	19	26%	47%	47%	37%	-
Regional	48	50%	60%	71%	42%	2%
Money Center	5	60%	40%	60%	20%	40%
Total	89	43%	61%	65%	36%	3%

- The importance of networking suggests that information systems solutions extend considerably beyond the DP center and include distributed processing as the mode, with increasing use of personal computers.
- Software obsolescence reigns, as shown in Exhibit VI-17, on top of the list of major technological issues affecting bank information services operations.
  - This concern holds all across bank types.
  - The data suggests that software and professional services vendors will find willing ears for innovative product offerings. INPUT suggests that software products vendors address on-line distributed solutions to line-of-business applications, particularly for wholesale banking.
- The largest 300 banks are vitally concerned about the impact of telecommunications deregulation on line-of-business operations. Nearly half of the top 300 bank executives interviewed ranked telecommunications deregulation as the second most important technological issue. Value-added network vendors and bypass telecommunications vendors can benefit from this operational assessment.
- Nearly 90% of all planning executives interviewed felt the decreasing cost of technology impacts bank operations.
  - The group as a whole, as shown in Exhibit VI-18, felt decreasing technological costs resulted in a moderate impact on bank operations.
  - Taking advantage of economies of scale, nearly 40% of planning executives interviewed in the top 100 banks believed decreasing technological costs have high impact on bank operations.

EXHIBIT VI-17

MAJOR TECHNOLOGICAL ISSUES AFFECTING  
BANK INFORMATION SERVICES OPERATIONS  
BY BANK TYPE IN 1985

BANK TYPE	SAMPLE SIZE	MAJOR TECHNOLOGICAL ISSUES						
		PERCENT OF RESPONDENTS						
		Rapid Chg. in Tech.	SW Obsoles- cence	In-house Resource Avail.	Tele. Dereg.	Cost of Tech.	Prog. Pro- ductivity	Other
Independent	17	65%	71%	35%	18%	35%	35%	-
Large Independent	19	47%	89%	32%	37%	42%	37%	16%
Regional	48	35%	37%	25%	46%	33%	35%	23%
Money Center	5	20%	40%	20%	60%	40%	20%	20%
Total	89	43%	53%	28%	39%	36%	35%	17%

Rating: 1 = Low, 10 = High

EXHIBIT VI-18

IMPACT OF DECREASING COST OF TECHNOLOGY ON BANK OPERATIONS  
AS REPORTED BY MARKET/PLANNING RESPONDENTS  
BY BANK TYPE IN 1985

BANK TYPE	SAMPLE SIZE	IMPACT (Percent of Respondents)		
		HIGH	MEDIUM	LOW
Independent	27	19%	70%	11%
Large Independent	24	21%	67%	12%
Regional	35	37%	54%	9%
Money Center	4	50%	50%	-
Total	90	28%	62%	10%



### 3. COMPETITION

- Close to 90% of the bank planning executives interviewed believe that new competition, particularly from nonbank institutions, is having a significant impact on bank operations, as shown in Exhibit VI-19.
  - Well over half of the executives interviewed in the top 300 banks perceive the impact as moderate. The data suggests that larger banks can handle competition better than can the 14,000+ smaller banks. It is probable that innovative vendor solutions contribute to the higher confidence level of planning executives in the larger money center, regional, and large independent banks.
  - Bank planning executives are, as shown in Exhibit VI-20, only slightly more concerned with the threat from competition resulting from interstate banking than they are from nonbank financial institutions.
  - As might be expected, more executives (47%) in smaller banks (independent and large independent) perceive a greater threat from the larger banks than from interstate banking.
  - Many executives in the money center banks interviewed believe that money center banks themselves create the competition for smaller banks. They perceive only modest threat from other banks, and they perceive interstate banking as an opportunity.
- As shown in Exhibit VI-21, bank planning executives uniformly perceive that the primary competition in corporate banking comes from the major (money center) banks.
  - Retailers and nonbank financial institutions as a group are half as important when considered as a competitive threat.

EXHIBIT VI-19

**IMPACT OF NEW COMPETITION ON BANK OPERATIONS  
AS REPORTED BY MARKET/PLANNING RESPONDENTS  
BY BANK TYPE IN 1985**

BANK TYPE	SAMPLE SIZE	IMPACT (Percent of Respondents)		
		HIGH	MEDIUM	LOW
Independent	27	48%	41%	11%
Large Independent	24	50%	46%	4%
Regional	35	37%	57%	6%
Money Center	5	40%	40%	20%
Total	91	44%	48%	8%

EXHIBIT VI-20

PERCEIVED THREATS IN THE WHOLESALE MARKET SECTOR  
AS REPORTED BY MARKET/PLANNING RESPONDENTS  
BY BANK TYPE IN 1985

BANK TYPE	SAMPLE SIZE	PERCENT OF RESPONDENTS	
		New Competition	Interstate Banking
Independent	31	39%	45%
Large Independent	26	38%	50%
Regional	42	38%	38%
Money Center	5	20%	20%
Total	104	37%	41%

EXHIBIT VI-21

MAJOR COMPETITION IN THE WHOLESALE BANKING SEGMENT  
AS REPORTED BY MARKET/PLANNING RESPONDENTS  
BY BANK TYPE IN 1985

BANK TYPE	SAMPLE SIZE	COMPETITION					
		PERCENT OF RESPONDENTS					
		Major Banks	Retailers	Savings & Loans	Nonbank Banks	Credit Unions	Local Banks
Independent	31	61%	6%	10%	19%	3%	23%
Large Independent	26	73%	4%	4%	8%	4%	35%
Regional	42	79%	14%	12%	36%	7%	50%
Money Center	5	80%	-	-	-	-	20%
Total	104	72%	9%	9%	23%	5%	31%

Rating: 1 = Low, 10 = High

- The data suggests that the smaller banks are susceptible to corporate banking products and services which emulate the functionality of selected offerings, as discussed in Chapter V.
- Bank planning respondents as a group perceive that major (money center) banks are the primary competitive threat in the trust line-of-business segment, as shown in Exhibit VI-22.
  - Retailers and other nonbank financial institutions draw little or no attention (less than 20%) with respect to trust product lines.
  - Corporate trust (particularly master-trust employee benefit plans) are becoming specialties of selected regional and money center banks (e.g., Northern Trust and State Street Bank).
  - The data suggests that increased competition in the trust line-of-business segment is perceived as coming from the major (money center) banks by bank planning executives in smaller (independent, large independent, and regional) institutions.
  - Bank trust planning executives in large independent banks are feeling the competition the most. They are losing market share of corporate employee benefit plans as the information systems requirements to successfully handle investment portfolios become even more complex.
  - The data suggests that information services vendors could successfully target software and professional services in the corporate employee benefit trust arena (employee benefit accounting, investment analysis, investment execution, securities custody accounting, etc.).
- International banking is the province of the top money center and largest (30) regional banks. The data, as shown in Exhibit VI-23, indicates that bank planning executives of the top 100 banks (regional and money center) perceive the primary competition in international markets are the top 100 banks.

EXHIBIT VI-22

MAJOR COMPETITION IN THE TRUST SEGMENT  
AS REPORTED BY MARKET/PLANNING RESPONDENTS  
BY BANK TYPE IN 1985

BANK TYPE	SAMPLE SIZE	COMPETITION					
		PERCENT OF RESPONDENTS					
		Major Banks	Retailers	Savings & Loans	Nonbank Banks	Credit Unions	Local Banks
Independent	31	61%	-	-	16%	3%	19%
Large Independent	26	92%	4%	8%	12%	4%	46%
Regional	42	62%	2%	5%	19%	2%	36%
Money Center	5	20%	20%	-	20%	-	-
Total	104	58%	3%	4%	16%	3%	32%

Rating: 1 = Low, 10 = High



EXHIBIT VI-23

MAJOR COMPETITION IN THE INTERNATIONAL MARKET SEGMENT  
AS REPORTED BY MARKET/PLANNING RESPONDENTS  
BY BANK TYPE IN 1985

BANK TYPE	SAMPLE SIZE	COMPETITION					
		PERCENT OF RESPONDENTS					
		Major Banks	Retailers	Savings & Loans	Nonbank Banks	Credit Unions	Local Banks
Independent	31	19%	-	-	3%	-	-
Large Independent	26	38%	4%	-	4%	-	12%
Regional	42	60%	2%	-	12%	-	17%
Money Center	5	60%	-	-	20%	-	-
Total	104	42%	2%	-	8%	-	10%

Rating: 1 = Low, 10 = High

- Independents and large independents have little access to world money markets at the present time. The situation may change somewhat as international financial electronic networks become worldwide.

#### 4. ECONOMY

- The sensitivity of corporate banking line-of-business to the economy is evident from the data presented in Exhibit VI-24.
- Operating on smaller spreads between financial market instruments, the top 100 banks (money center and regionals) show greater sensitivity to the economy than do the other 200 banks that make up the top 300 in the U.S.
- The economy is not nearly as sensitive to the trust line-of-business as it is in other wholesale banking lines. As is shown in Exhibit VI-25, over half of those responding rated the economy as having a moderate impact on the trust line-of-business.
- Changes in tax law and ERISA regulations command the primary attention of executives involved in trust line-of-business planning.
- The data, as shown in Exhibit VI-26, reflects that only the very largest banks are in the international arena.
  - To the major players, the economy is a highly significant factor in international banking operations.
  - The continued instability in world money markets, together with the growing interdependency of the U.S. economy on the world economy, suggests that innovative information services vendors will find ever increasing market opportunities for products and services in the international banking arena.

EXHIBIT VI-24

IMPACT OF SELECTED FACTORS ON  
THE CORPORATE BANKING SEGMENT AS REPORTED  
BY MARKET/PLANNING RESPONDENTS  
BY BANK TYPE IN 1985

BANK TYPE	CORPORATE ELECTRONIC BANKING PRODUCTIVITY PLANNING DEVELOPMENT PRIORITY											
	TECHNOLOGY				COMPETITION				ECONOMY			
	Sample Size	High	Med.	Low	Sample Size	High	Med.	Low	Sample Size	High	Med.	Low
Independent	22	41%	27%	32%	22	55%	41%	4%	22	50%	41%	9%
Large Independent	19	58%	16%	26%	19	53%	37%	10%	18	39%	39%	22%
Regional	34	53%	47%	-	34	56%	41%	3%	32	47%	50%	3%
Money Center	3	67%	33%	-	3	67%	33%	-	3	67%	37%	-
Total	78	52%	33%	15%	78	55%	40%	5%	75	47%	44%	9%

EXHIBIT VI-25

IMPACT OF SELECTED FACTORS ON THE TRUST SERVICES SEGMENT  
AS REPORTED BY MARKET/PLANNING RESPONDENTS  
BY BANK TYPE IN 1985

BANK TYPE	PROTION OF RESPONDENTS											
	TECHNOLOGY				COMPETITION				ECONOMY			
	Sample Size	High	Med.	Low	Sample Size	High	Med.	Low	Sample Size	High	Med.	Low
Independent	19	16%	47%	37%	19	47%	32%	21%	19	37%	53%	10%
Large Independent	16	12%	50%	38%	16	56%	38%	6%	15	33%	47%	20%
Regional	34	6%	62%	32%	35	26%	63%	11%	33	15%	61%	24%
Money Center	2	50%	50%	-	2	-	100%	-	2	50%	-	50%
Total	71	11%	55%	34%	72	38%	50%	12%	69	26%	54%	21%

EXHIBIT VI-26

IMPACT OF SELECTED FACTORS ON INTERNATIONAL BANKING SEGMENT  
AS REPORTED BY MARKET/PLANNING RESPONDENTS  
BY BANK TYPE IN 1985

BANK TYPE	PORTION OF RESPONDENTS											
	TECHNOLOGY				COMPETITION				BUSINESS ENVIRONMENT			
	Sample Size	High	Med.	Low	Sample Size	High	Med.	Low	Sample Size	High	Med.	Low
Independent	5	20%	40%	40%	5	20%	60%	20%	6	50%	-	50%
Large Independent	10	20%	50%	30%	11	18%	27%	55%	11	18%	46%	36%
Regional	29	52%	38%	10%	29	38%	48%	14%	28	54%	32%	14%
Money Center	2	50%	50%	-	2	-	100%	-	3	67%	33%	-
Total	46	41%	41%	18%	47	30%	47%	23%	48	46%	31%	23%

## 5. OTHER FACTORS

- There is little doubt, from the data shown in Exhibit VI-27, that industry deregulation is having a high impact on at least the top 300 banks in the U.S.
- The data suggests that the continuing impact of deregulation spawns numerous opportunities for innovative computer services vendors to develop and offer a wide variety of on-line, interactive, networked financial information products and services. The opportunities are particularly strong in the corporate banking lines, as was shown in Chapter V.
- The rapidly falling barriers to statewide bank branching and multi-bank holding formation, particularly in unit banking states, has had a high impact on planned bank operations, as shown in Exhibit VI-28.
  - The impact is even more important (62%) for the largest 300 banks.
  - As commercial banks extend financial information services statewide, requirements increase for on-line interactive, distributed, value-added, and bypass communications services.
- The behavior of money markets, increasingly on a worldwide basis, is having a high impact on bank operations, as shown in Exhibit VI-29.
- The data suggests that financial information data base services, including analysis, trading, and execution, are highly saleable financial information services across all bank types.



EXHIBIT VI-27

**IMPACT OF INDUSTRY DEREGULATION ON BANK OPERATIONS  
AS REPORTED BY MARKET/PLANNING RESPONDENTS  
BY BANK TYPE IN 1985**

BANK TYPE	SAMPLE SIZE	IMPACT (Percent of Respondents)		
		HIGH	MEDIUM	LOW
Independent	26	42%	50%	8%
Large Independent	24	71%	25%	4%
Regional	38	71%	18%	11%
Money Center	5	80%	20%	-
Total	93	63%	29%	8%

EXHIBIT VI-28

IMPACT OF INTRASTATE BANKING ON BANK OPERATIONS  
AS REPORTED BY MARKET/PLANNING RESPONDENTS  
BY BANK TYPE IN 1985

BANK TYPE	SAMPLE SIZE	IMPACT (Percent of Respondents)		
		HIGH	MEDIUM	LOW
Independent	26	35%	62%	3%
Large Independent	23	61%	22%	17%
Regional	35	63%	26%	11%
Money Center	3	67%	33%	-
Total	87	54%	36%	10%

EXHIBIT VI-29

**IMPACT OF MONEY MARKETS ON BANK OPERATIONS  
AS REPORTED BY MARKET/PLANNING RESPONDENTS  
BY BANK TYPE IN 1985**

BANK TYPE	SAMPLE SIZE	IMPACT (Percent of Respondents)		
		HIGH	MEDIUM	LOW
Independent	27	52%	37%	11%
Large Independent	25	64%	36%	-
Regional	35	46%	46%	8%
Money Center	3	67%	33%	-
Total	90	53%	40%	7%

## E. THE ROLE OF INFORMATION SERVICES VENDORS

### I. BANK INFORMATION SERVICES OFFERINGS

- The degree that commercial banks are participating in the service bureau business is highlighted in Exhibit VI-30.
  - Just over one-third of MIS/DP executives interviewed were involved in providing information services to other banks and financial institutions (S&Ls, credit unions, etc.).
  - Commercial banks are concentrating scarce resources on their commercial and consumer client bases.
  - The high merger and acquisition rate integrates many banks which were formerly handled through correspondent relationships into multi-bank holding companies.
  - The data suggests that information processing vendors still have numerous opportunities for acquisition of bank data processing affiliates and information processing accounts.
- Less than 20% of bank MIS/DP officers interviewed, as shown in Exhibit VI-31, were planning on expanding information services offerings. The data supports the market trend of consolidation of other bank and financial institution processing as commercial banks focus their resources on their consumer and commercial client bases.
- The data confirms the assessment outlined above with respect to information service offerings.

EXHIBIT VI-30

COMMERCIAL BANKS OFFERING INFORMATION SERVICES  
BY BANK TYPE IN 1985

BANK TYPE	SAMPLE SIZE	PERCENT OF RESPONDENTS
Independent	17	24%
Large Independent	19	53%
Regional	48	33%
Money Center	5	-
Total	89	34%

EXHIBIT VI-31

COMMERCIAL BANKS EXPANDING INFORMATION SERVICES  
BY BANK TYPE IN 1985

BANK TYPE	SAMPLE SIZE	PERCENT OF RESPONDENTS
Independent	17	18%
Large Independent	19	26%
Regional	48	19%
Money Center	5	-
Total	89	19%



## 2. JOINT VENTURES

- The data presented in Exhibit VI-32 indicates that MIS/DP executives do not have their attention focused on joint ventures with information services vendors. The commercial banking industry by nature, with some exceptions (i.e., Citicorp, Security Pacific, Mellon, and MTech), responds to as opposed to initiates marketing and other relationships with information services vendors.
- INPUT believes that partnering, including joint ventures, third-party, and private label arrangements, could become an increasingly effective distribution channel for information services vendor products and services.

## 3. INFORMATION SERVICES VENDOR SELECTION

- Counter to conventional wisdom, cost is, as shown in Exhibit VI-33, a major criteria in information services vendor products/services selection.
  - The importance holds across all bank types.
  - Another important criteria is the availability of in-house resources. There is a noticeable shift in attitude from buy to make, particularly among the larger banks, where the information systems become increasingly more on-line, interactive, real time, distributed, and functionally complex.
- On the average, commercial bank MIS/DP executives focus their buying policy more toward vendor type (hardware, software, professional services, etc.) as opposed to the specific type of services (RCS, facility management, professional services, etc.) offered, as shown in Exhibit VI-34.
  - The data suggests that the "one-stop" shopping trend is on the rise.

EXHIBIT VI-32

COMMERCIAL BANKS PLANNING JOINT VENTURES  
WITH INFORMATION SERVICES VENDORS  
BY BANK TYPE IN 1985

BANK TYPE	SAMPLE SIZE	PERCENT OF RESPONDENTS
Independent	17	-
Large Independent	19	32%
Regional	48	13%
Money Center	5	20%
Total	89	15%

EXHIBIT VI-33

CRITERIA USED BY COMMERCIAL BANK MIS/DP EXECUTIVES  
FOR VENDOR INFORMATION PRODUCTS/SERVICES  
MAKE OR BUY DECISIONS BY BANK TYPE IN 1985

BANK TYPE	SAMPLE SIZE	CRITERIA (Percent of Respondents)				
		Problem Complexity	Avail. of In-House Resources	Vendor/ Product Reputation	Cost	Vendor/ Product Options
Independent	17	65%	59%	59%	88%	41%
Large Independent	19	37%	58%	47%	63%	37%
Regional	48	27%	50%	25%	69%	15%
Money Center	5	40%	80%	60%	80%	20%
Total	89	37%	55%	38%	72%	25%

EXHIBIT VI-34

**PREFERENCES USED BY COMMERCIAL BANK MIS/DP EXECUTIVES  
FOR BUYING VENDOR INFORMATION PRODUCTS/SERVICES  
BY BANK TYPE IN 1985**

BANK TYPE	SAMPLE SIZE	BUYING PREFERENCES (Percent of Respondents)		
		SERVICE TYPE	VENDOR TYPE	OTHER
Independent	17	53%	47%	6%
Large Independent	19	16%	26%	32%
Regional	48	38%	56%	27%
Money Center	5	-	60%	40%
Total	89	34%	48%	25%

- Alternate modes of delivery of selected financial information services vendor offerings are in order.

#### 4. LINE-OF-BUSINESS SUPPORT

- As a group, MIS/DP believe, as shown in Exhibit VI-35, that the retail line of business still requires the most information services vendor support.
  - For the top 100 (regional and money center) banks, the need becomes equally strong for the wholesale banking lines.
  - The data suggests that well planned financial information products/services for the wholesale banking targeted toward the largest 100 banks is an effective market strategy.

### F. FUTURE PRODUCTS/SERVICES

#### I. FUTURE MIS/DP EXPENDITURES, 1986-1991

##### a. MIS/DP Budgets

- As shown in Exhibit VI-36, the MIS/DP executives in the interview sample report a planned growth rate for commercial banks as a whole of 13% annually for the five-year forecast period.
  - The growth rate is slightly higher for the top 300 banks (14% annually).
  - The growth rate is greater than the historical average annual gross rate for commercial bank deposits (10.5%), a key indicator of computer automation expenditures.

EXHIBIT VI-35

MARKET SEGMENTS REQUIRING THE MOST INFORMATION  
SERVICES VENDOR SUPPORT  
BY BANK TYPE IN 1985

BANK TYPE	SAMPLE SIZE	MARKET SEGMENT					
		PERCENT OF RESPONDENTS*					
		Whole- sale	Retail	Bank Card	Trust	Info. Proces. Serv.	Other
Independent	17	6%	35%	18%	18%	71%	65%
Large Independent	19	11%	53%	32%	32%	26%	11%
Regional	48	54%	71%	15%	27%	10%	8%
Money Center	5	80%	60%	40%	60%	40%	-
Total	89	37%	57%	20%	28%	27%	8%

Rating: 1 = Low, 10 = High

\* Multiple Responses Possible



EXHIBIT VI-36

AVERAGE ANNUAL GROWTH RATE IN MIS/DP  
BUDGETS BY BANK TYPE  
FROM 1986-1991

BANK TYPE	SAMPLE SIZE	AAGR 1986-1990 MIS/DP BUDGETS
Independent	17	6%
Large Independent	19	12%
Regional	48	15%
Money Center	5	10%
Total	89	13%

- The continued substitution (particularly in the mini and micro-base systems area) of automation for relentlessly increasing labor costs could well double the average growth rate for that portion of total budgets devoted to information systems products and services.

b. Line-of-Business Expenditures

- Retail services will, as shown in Exhibit VI-37, still command the greatest portion of planned MIS/DP budgets over the next five years.
- The results hold true for all bank types, but less so for the top 100 regional and money center banks.
- Wholesale line-of-business services (corporate, corporate trust, international banking, and business services) represent at least 45% of the total. INPUT believes that the corporate and international banking lines-of-business represent a progressively expanding market opportunity for innovative information services vendors.

c. Information Services Expenditures

- As shown in Exhibit VI-38, MIS/DP executives plan to maintain approximately the same portion of future budgets allocated to information services as is in the current planning (see Exhibit VI-4).
- The healthy portion (in excess of 20%) planned for information services by the top 300 banks supports the information services forecast of \$4 billion expenditures for wholesale banking line-of-business by the end of the decade.
- Remote computing services will, as shown in Exhibit VI-39, still command the largest portion of MIS/DP budgets allocated for vendor-supplied information services during the last half of the decade.

**DISTRIBUTION OF PLANNED MIS/DP BUDGETS FOR COMMERCIAL BANKING SERVICES  
BY BANK TYPE FOR 1986-1991**

<b>MAJOR COMMERCIAL BANK FUNCTIONS</b>								
<b>BANK TYPE</b>	<b>SAMPLE SIZE</b>	<b>AVERAGE PORTION OF MIS/DP BUDGETS (Percent)</b>						
		<b>Corporate Services</b>	<b>Retail Services</b>	<b>Card Products and Services</b>	<b>Trust Services</b>	<b>International Banking Services</b>	<b>Administrative Services</b>	<b>Business Services</b>
Independent	17	19%	41%	8%	8%	4%	11%	9%
Large Independent	19	16%	41%	16%	11%	4%	10%	2%
Regional	48	18%	28%	13%	8%	10%	9%	14%
Money Center	5	21%	22%	6%	19%	11%	8%	13%
<b>Total</b>	<b>89</b>	<b>18%</b>	<b>31%</b>	<b>13%</b>	<b>9%</b>	<b>7%</b>	<b>9%</b>	<b>13%</b>
								<b>100%</b>

EXHIBIT VI-38

AVERAGE PORTION OF MIS/DP BUDGETS PLANNED  
FOR VENDOR INFORMATION SERVICES  
BY BANK TYPE FROM 1986-1991

BANK TYPE	SAMPLE SIZE	1986 IS PORTION OF MIS/DP BUDGETS
Independent	17	30%
Large Independent	19	23%
Regional	48	22%
Money Center	5	20%
Total	89	24%

EXHIBIT VI-39

DISTRIBUTION OF PLANNED MIS/DP BUDGETS FOR  
VENDOR-SUPPLIED INFORMATION SERVICES  
BY BANK TYPE FOR 1986-1991

BANK TYPE	SAMPLE SIZE	VENDOR SUPPLIED SERVICES AVERAGE PORTION OF MIS/DP BUDGETS								
		Soft-ware	RCS	Turnkey Systems	Prof. Services	Data Base Services	Facilities Mgt.	Bank Card Services	Other	Total
Independent	17	18%	47%	2%	8%	2%	9%	3%	11%	100%
Large Independent	19	17%	28%	3%	14%	5%	16%	7%	10%	100%
Regional	48	23%	38%	3%	10%	2%	12%	2%	10%	100%
Money Center	5	23%	20%	4%	5%	11%	14%	11%	12%	100%
Total	89	21%	33%	3%	9%	4%	12%	7%	11%	100%

## 2. STRATEGIES

- The data presented in Exhibit VI-40 would indicate that bank planning officers interviewed have rather diffused strategies for marketing new financial information services.
  - Over 40% of executives interviewed were uncertain of specific corporate planning strategies for new product introduction.
  - The data indicates that information services vendors must take the lead through partnering, joint venture, and other third-party arrangements to define and develop new and innovative financial information products and services.



EXHIBIT VI-40

STRATEGIES FOR MARKET/PLANNING  
NEW INFORMATION SERVICES PRODUCTS  
BY BANK TYPE IN 1985

	IMPACT (Percent of Respondents)				
	SAMPLE SIZE	Counter Competition	Competitive Edge	Competitive Barriers	Don't Know
Independent	31	19%	19%	6%	56%
Large Independent	26	23%	23%	19%	34%
Regional	42	24%	29%	14%	33%
Money Center	5	-	20%	-	80%
Total	104	21%	24%	13%	42%



VII WHOLESALE BANKING INFORMATION SYSTEMS  
PRODUCTS AND SERVICES



## VII WHOLESALE BANKING INFORMATION SYSTEMS PRODUCTS AND SERVICES

### A. INTRODUCTION

- There is an ever-increasing variety and integration of financial information products and services to corporate America operating both domestic and worldwide. Comprehensively detailing the entire marketplace is beyond the scope of this study.
- The information presented below is meant to outline and highlight typical and leading services and product offerings. Material is presented in two dimensions: (1) commercial bank financial information offerings to industrial end users, and (2) information services vendor products/services offerings.
- A word need be said on pricing. Comprehensive mainframe offerings (i.e., commercial lending, corporate trust, etc.) are highly complex and command price tags in six figures and up. It is not unusual for mini/microcomputer-based software products (turnkey systems) to range from \$20-100,000.
  - Therefore, unit sales are few, but the price tags are high and a degree of customization (professional services) is frequently involved.

## B. COMMERCIAL BANK OFFERINGS

- A number of money center and regional banks are considered technological leaders in offering financial information services to commercial financial end users.

### I. CITICORP

- Citicorp, adopting a strategy of developing on-line interactive technology, fosters direct interaction between end users and Citicorp's financial information data bases and services.
- Another strategy links all Citicorp facilities worldwide with a proprietary telecommunications system.
- Ability to track transactions from origin to delivery enables Citicorp to monitor profitability by product and by customer and to integrate all customer activity under a single account.
- Cost and fees can be tabulated by both domestic electronic banking services and by foreign exchange, letters of credit, bankers' acceptances, investment banking, commissions, and credit losses.
- Recent reorganization under Chairman John Reed has restructured the institutional (corporate) bank to prepare for the "merchant banking" wave of the future.
  - Direct lending now accounts for less than half of the consolidated earnings of the institutional bank.
  - Primary activities center around packaging and reselling corporate and multinational loans (merchant banking).



- In addition to multinational on-line cash management, Citicorp offers an extensive array of financial information data base, electronic funds transfer, letter-of-credit, and foreign exchange services to its wholesale clients.
- Citicorp has direct telecommunications capability 24 hours per day, 7 days a week, in over 160 cities spanning 90 countries.
  - Ten earthstations connect to Citicorp's communications satellite, allowing over 10,000 electronic mail messages daily between Citicorp's wholesale banking activities.
  - Five major nodes operating under X.25 are interconnected by leased international lines giving Citicorp access to Europe (London) and the Far East (Singapore).

## 2. SECURITY PACIFIC CORPORATION (SPNB)

- Recognizing the importance of electronic information systems to national and Far East operations, SPNB established Security Pacific Automation Company. The results are showing up in sharply rising non-interest income and lower ratio of non-interest expense on assets.
- Specializing in middle-market lending, SPNB has established 45 business banking centers in California as well as another number of Edge Act subsidiaries.
  - The applications include automated document preparation, credit approval and review, call reports, and electronic mail.
- Upgraded cash management services are offered to both corporate clients and on a private label basis to other financial institutions.

- On-line systems include lock-box operations which update balances during the day, real time funds transfer, client-initiated letters of credit, and automated borrowing against committed lines of credit.
- SPNB offers a PC-based treasury work statement, "SPACIFICS Plus."

### 3. NATIONAL BANK OF DETROIT (NBD) BANKCORP

- Concentrating on on-line technology in wholesale banking as well as other lines of business, NBD is challenging First Chicago as the premier regional bank in the Great Lakes section of the Midwest.
- Consolidating backroom activities of its 18 affiliate banks and interconnecting its Network One with the Cirrus ATM network is allowing NBD to "piggyback" corporate transactions on a national end-user financial transaction network.
  - Service offerings include corporate ATM debit cards, on-line cash management services, personal computer interfaces, and corporate settlements.
  - The recent purchase of Computer Communications of America, a credit card authorizing and processing service that operates a large point-of-sale network, further enhances NBD's electronic delivery capability.
- NBD markets its wholesale services to its affiliates and correspondent banks.
- Shifting to customer/product line cost/profitability measuring systems architecture, NBD is well on its way to full relationship banking.
- NBD's latest on-line system accomplishes corporate trade payments (CTP) between major automotive companies and their component suppliers.

- Operating out of 40 collection centers nationwide, NBD has upgraded and integrated its wholesale lock-box services with its cash management (Cashnet) services.
- NBD's PC-based treasury workstations support key treasury functions including cash flow forecasting and debt management as well as deposit concentration, on-line balance reporting, and scheduled disbursements.
- Funds transfer, ACH disbursements (i.e., payroll), and corporate trade payments (CTP) can be remotely initiated by corporate end users on PCs.

#### 4. FIRST CHICAGO CORPORATION (FCC)

- First Chicago has established electronic data interchange (EDI) as a primary strategy in expanding wholesale banking financial services.
- EDI includes electronic business data interchange (EBDI), formatted electronic mail, and electronic funds transfer (EFT) including corporate trade payments (CTP).
- The strategy addresses development of universal message standards, certainty of delivery, security, audability, and paperless transactions.
- Spending in excess of \$20 million per year on development of new corporate financial information services, First Chicago has become the leading regional bank in Illinois, if not in the Upper Midwest.
- Specializing in "one-stop shopping" for corporations needing national remittance processing (e.g., insurance, automotive, etc.), First Chicago, operating out of five electronically interconnected processing sites nationwide, has increased its wholesale lock-box services by a factor of 20 over the past two years.

- Utilizing Tandem Non-Stop computers, First Chicago provides corporate customers with on-line, real time access to money transfer information on a worldwide basis, transferring over \$50 billion daily.
- First Chicago has established a market niche in offering the manufacturing and transportation industries' freight payment, reconciliation, and invoicing services.

## 5. NORTHERN TRUST

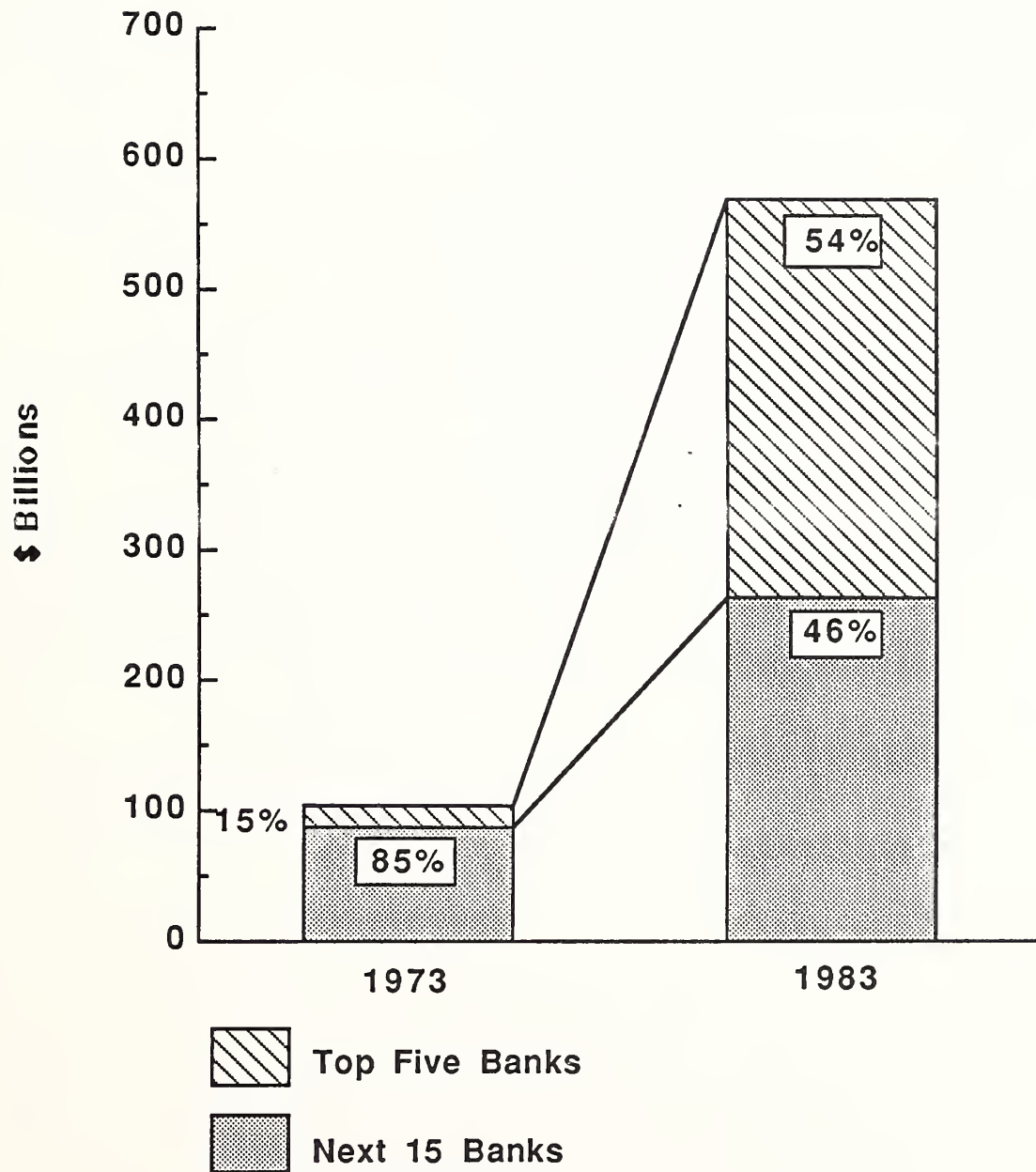
- Northern Trust and State Street Boston are the two regional leaders in the master trust line of business.
- Northern Trust spends between \$2 and \$5 million annually in improving and adding features to permit increased interaction between corporate retirement fund managers and the bank's data bases and trust information services.
- Software-based features currently differentiate banks such as Northern Trust from their competitors in master trust markets. This has led to a concentration within the last five years whereby, as shown in Exhibit VII-1, the top five banks control over half of the \$570 billion in employee pension plan trust assets.

## 6. STATE STREET BOSTON CORPORATION (SSB)

- Specializing in custody services to mutual funds industry, SSB services over 600 mutual funds, controlling approximately 40% of total mutual fund assets.
  - SSB has recently installed debit card access and processing for nearly 500,000 mutual fund customers.

EXHIBIT VII-1

DISTRIBUTION OF MASTER TRUST ASSETS  
BY BANK SIZE, 1973-1983



Sources: Money Market Directory; Pensions and Investment Age.

- New on-line systems permit portfolio analysis and general ledger accounting as well as securities custody.
- SSB is applying technology to the insurance industry, handling fixed and variable annuities and flexible premium variable life.

## 7. BANKERS TRUST, NEW YORK

- Selling its retail operations, Bankers Trust has shifted its corporate focus to investment and merchant banking.
  - The company utilizes a centralized approach with the most sophisticated electronics for the trading room operations of its resource management division.
  - Foreign exchange and trading operations are integrated in an advanced control center.
  - Integration of asset and liability operations and the use of economic and financial data bases to provide traders with 24-hour access to worldwide money markets are examples of applying electronic technology to investment banking.
- Bankers Trust has been the innovator of packaging and securing corporate loans for resale (participation) by regional banks, international banks, insurance funds, and pension funds.



## C. VENDOR PRODUCTS/SERVICES

### I. CASH MANAGEMENT SERVICES

- As was shown in Chapter IV, micro-based cash treasury systems are key to establishing an integrated interface between commercial banks, other financial institutions, and commercial financial executive end users.
- A dozen typical micro-based (IBM and IBM-compatible) systems are shown in Exhibit VII-2.
  - The product offerings show various degrees of function integration.
  - Virtually all systems have been modularized and sold as such. Future enhancements are the order of the day.
- The products provide various degrees of the following functions:
  - Balance reporting.
  - Cash spreadsheets.
  - Debt and investment.
  - Communications.
  - Funds transfer.
  - Account analysis.
  - Banking relationships.



## EXHIBIT VII-2

**TYPICAL MICRO-BASED CASH MANAGEMENT  
INFORMATION SYSTEMS PRODUCT OFFERINGS**

VENDOR	PRODUCT	FUNCTIONS	PC	PRICE
Bank of America	MicroStar	Standard cash management functions. A new communications device will be available this spring. A translation feature automates the transfer of data among various applications.	IBM PC/XT and PC/AT	\$295 to \$40,000, depending on the modules.
Bank of Boston	Treasury Manager	Account balance reporting, summary debit, lock-box retrieval/reporting, debt and investment management, wire transfer, internal cash management, and treasury support.	IBM PC/XT and PC/AT	\$9,500 to \$35,000, depending on the modules.
Capital Systems Group, Inc.	MicroCTS	11 integrated modules that can automate money transfer, communications, investments, loans, revolving credits, and relationship management.	IBM PC and PC/XT	\$5,995 for the complete system.

Continued

EXHIBIT VII-2 (Cont.)

TYPICAL MICRO-BASED CASH MANAGEMENT  
INFORMATION SYSTEMS PRODUCT OFFERINGS

VENDOR	PRODUCT	FUNCTIONS	PC	PRICE
Chase Manhattan Bank	InfoCash MicroStation	Integrated core modules include: balance and transaction reporting, cash decision worksheet, money transfer, and receipts.	IBM PC/XT and PC/AT	Can lease or buy. Cash modules: \$500/month to lease, \$15,000 to buy plus \$150/month for support. Investment/debt modules: \$350/month to lease, \$10,000 to buy, plus \$100/month for support. Bank relationship modules: \$150/month to lease, \$5,000 to buy, plus \$50/month for support.
CitiBank	CitiIntegrator	2 core modules: data collection and report consolidation.	IBM PC/XT	Not Available
Datamatic Management Service	Datapoint	Wire transfers, internal cash management, investment portfolio management, and treasury support.	IBM PC	\$11,000

Continued

EXHIBIT VII-2 (Cont.)

TYPICAL MICRO-BASED CASH MANAGEMENT  
INFORMATION SYSTEMS PRODUCT OFFERINGS

VENDOR	PRODUCT	FUNCTIONS	PC	PRICE
Future Technologies International	MicroCash	Balance reporting, internal cash management, wire transfers, debt and investment management, lock-box, and treasury management.	IBM PC/XT and PC/AT, AT&T 6300, NCR DecisonMate 4 and 5, and Compaq Plus.	System ranges from \$3,000 to \$25,000, depending on the modules.
IBM	Corporate Cash Management	9 main functions: balance reporting, cash worksheet, debt and investment, communications, funds transfer, account analysis, banking relationships, analytical tools, account maintenance.	IBM PC and PC/XT	\$4,000, with volume discounts determined by the number of licenses a bank commits to resell.
Interactive Data Corp.	Treasurer's EXCHANG/ Micro Station	Account balance reporting, wire transfer, investment portfolio management, and relationship management.	IBM PC/XT	Not available.

Continued

EXHIBIT VII-2 (Cont.)

TYPICAL MICRO-BASED CASH MANAGEMENT  
INFORMATION SYSTEMS PRODUCT OFFERINGS

VENDOR	PRODUCT	FUNCTIONS	PC	PRICE
Manufacturers Hanover Trust	Interplex	Standard Treasury, investment and debt management functions, plus communications, verification and reconciliation, forecasting, and pooled investments.	IBM PC/XT, and PC/AT, and DEC.	System ranges from \$3,000 to \$40,000, depending on the modules.
National Data Corp.	Treasury Manager System	Standard cash management functions, plus a cash position manager that consolidates all current account data and can forecast up to 30.	IBM PC/XT and PC/AT	Modules start at \$2,500.
Well Fargo Bank Cash Management Program	MicroExpress	Balance reporting, internal cash management, debt and investment management, and lock-box reporting.	All IBM-compatible personal computers	\$3,500 to \$5,000

- Analytic analysis.
- File/data base management.
- Bank Link, Chemical Bank's own private label system offered through GEISCO and other RCS vendors, provides data interchange capability for interfacing PCs with minicomputers or mainframes utilizing up to 4,800 baud data transfer lines.
- Over 80 commercial banks are currently involved in offering the cash management services and are reporting members of the network.
- Cash management services are being extended to small businesses.
  - First National Bank of Atlanta is field testing its InTouch cash management system on IBM PC-compatibles.
  - Chemical Bank, Madison National Bank in Washington, and PSFS in Philadelphia are others offering micro-based small business cash management services.

## 2. COMMERCIAL LENDING

- Typical of the newer milieu of micro-based commercial lending and accounting systems that interface with bank mainframes as necessary is the Loan Accounting System of Darling and Associates, Inc.
  - The IBM PC/XT or AT or compatible software package, priced at \$7,500, provides the critical functions of loan booking, servicing, and customer and portfolio reporting. The system handles a variety of commercial loans including demand loans, lines of credit, term loans, participation loans, construction loans, and escrow loans.



- The system provides for total loan relationships covering both loans at multiple locations and multiple loans granted to a corporation, including division relationships.
- In an exclusive marketing arrangement with IBM, Hogan Systems, Inc. is offering an integrated commercial loan package that operates on large-scale IBM mainframes.
  - The commercial loan package will be part of an integrated banking software package capable of being tailored to the top 150 world banks which include the major U.S. money center and regional banks.
  - INPUT considers the marketing arrangement between IBM and Hogan Systems an excellent example of how partnering arrangements can be complementary to the development and sale of vertical market products and services.

### 3. MORTGAGE BANKING

- Automation of the mortgage banking line-of-business for both commercial and housing (multiple as well as single family) has been accelerated in response to falling interest rates. A wide variety of processing and servicing mortgage banking applications is becoming available using everything from micro-based turnkey systems to third-party networks.
  - Typical mortgage banking products/services are shown in Exhibit VII-3.
  - There is proliferation of systems running on IBM PC-compatible microcomputers that are modularized and have prices ranging from \$500-10,000.
  - Applications running on DEC, Data General, and Honeywell minis tend to be bundled and range from \$15-50,000.



## EXHIBIT VII-3

**TYPICAL MORTGAGE BANKING INFORMATION SYSTEMS  
PRODUCTS AND SERVICES**

VENDOR	PRODUCT	FUNCTIONS	SYSTEM	PRICE
American Micro	The Simple Soft Real Estate Investor	Decision analysis for real estate investment	IBM PC	\$149
Applied Mind Systems, Inc.	TAC-PC Property Management	Mortgage document preparation, real estate and asset management, loan management	IBM PC/AT	\$12,500
			IBM PC/AT	\$10,000
Automated Financial Systems, Inc.	Total Loan System for Bank Management	Complete mortgage processing system	IBM mainframes	Not Available
Canton Automated Systems, Inc.	Loan Application Tracking and Closing System	Loan origination, processing, management, closing, documentation, secondary marketing	IBM mainframes	\$37,500
COBE Corp.	COBE Mortgage Lending System	Loan origination, tracking and reporting, document preparation, secondary marketing	IBM AT, XT, Wang PC Wang Micro VP and 2200 Compaq Plus	\$12,500-\$17,500

Continued

**EXHIBIT VII-3 (Cont.)**

**TYPICAL MORTGAGE BANKING INFORMATION SYSTEMS  
PRODUCTS AND SERVICES**

<b>VENDOR</b>	<b>PRODUCT</b>	<b>FUNCTIONS</b>	<b>SYSTEM</b>	<b>PRICE</b>
<b>Consultant Systems, Inc.</b>	<b>Real Estate Consultant</b>	<b>Loan and property analysis</b>	<b>Most PCs</b>	<b>\$395</b>
<b>Contour Software, Inc.</b>	<b>Loan Finder</b>	<b>Prequalification program</b>	<b>IBM PC, XT, AT Apple IIe</b>	<b>\$500</b>
	<b>Loan Tracker</b>	<b>Report generator</b>	<b>IBM PC, XT, AT Apple IIe</b>	<b>\$350 \$750</b>
	<b>Loan Closer</b>	<b>Mortgage closing</b>	<b>IBM XT, AT</b>	<b>\$2,500</b>
	<b>Loan Handler</b>	<b>Loan processing</b>	<b>Apple IIe</b>	<b>\$1,150</b>
	<b>Loan Servicer</b>	<b>Loan servicing</b>	<b>IBM PC, XT, AT IBM XT, AT</b>	<b>\$1,500 \$3,500</b>
<b>Data Communications Corp.</b>	<b>Mortgage Banking System</b>	<b>Loan servicing</b>	<b>Data General PCs and Eclipse IBM 4300</b>	<b>\$110,000- \$200,000</b>
	<b>Mortgage Loan Systems</b>	<b>Loan origination</b>	<b>AT&amp;T PC</b>	<b>\$8,500</b>
<b>Data-Link Systems, Inc.</b>	<b>FASTEYLLER</b>	<b>Mortgage loan servicing and investor reporting</b>	<b>IBM 4381, IBM 3033</b>	<b>Not Available</b>
	<b>FASTRACKER FASTCLOSER</b>	<b>Warehousing System Loan closing</b>		
<b>Designed Applications</b>	<b>Bi-weekly Mortgage Loan System</b>	<b>Computes bi-weekly loan servicing</b>	<b>IBM PC, XT, AT</b>	<b>\$2,000</b>
	<b>Monthly Mortgage Loan System</b>	<b>Complete loan servicing</b>	<b>IBM PC, XT, AT</b>	<b>\$2,000</b>

Continued

EXHIBIT VII-3 (Cont.)

TYPICAL MORTGAGE BANKING INFORMATION SYSTEMS  
PRODUCTS AND SERVICES

VENDOR	PRODUCT	FUNCTIONS	SYSTEM	PRICE
Dynamic Interface Systems Corp.	LOANLEDGER+	Loan servicing.	IBM XT, AT	\$5,500
	M/BANKER+	Investor tracking and disbursement	IBM XT, AT	\$1,500
	PRIME +	Calculations for loans tied to prime coupon payment books	IBM XT, AT	\$500
	Interest Only	Calculations for commercial loans	IBM XT, AT	\$500
	ARM+	Calculations for ARMs	IBM XT, AT	\$2,500
Financial Publishing Co.	FIN/CAL Desktop Mort- gage Loan Calculator	Programmable mortgage loan calculator	Not available	\$1,675- \$1,895
	FIN/CAL Desktop Mortgage Banker	Programmable mortgage loan calculator	Not available	\$2,495- \$2,795
	FIN/CAL Pocket Qualifier	Hand-held loan qualifier calculator	Not available	\$495- \$575
Gallagher Financial Systems, Inc.	REG Z/PLUS	Mortgage document preparation, loan calculation	Not available	Not available
Gilcom Corp.	Gilcom System	Loan origination, and document preparation	IBM XT, AT	\$5,000
	Mortcalc System	Disclosure calculation	IBM PC	\$1,000

Continued

## EXHIBIT VII-3 (Cont.)

# TYPICAL MORTGAGE BANKING INFORMATION SYSTEMS PRODUCTS AND SERVICES

VENDOR	PRODUCT	FUNCTIONS	SYSTEM	PRICE
Hale Systems	Mortgage Loan Origination and Tracking System	Loan origination and document preparation Disclosure calculation	Datamedia, DEC 2000, Honeywell DPS 6 IBM Series 1	\$13,500- \$30,500
Hogan Systems, Inc.	Hogan Integrated Loan System	Complete mortgage loan processing	IBM mainframes	Not available
HowardSoft	Real Estate Analyzer	Real estate investment analysis	Apple IIe, IBM PC, XT, AT	\$295 \$350
Information Technology, Inc.	Loan Accounting System	Complete loan processing system	Burroughs mainframe	\$12,200- \$65,100
Logica, Inc.	Loan Conversion System	Transfers data to Hogan Integrated Loan System	IBM mainframes	\$185,000
Lomas & Nettleton	Lomas & Nettleton System	Complete mortgage processing system	Burroughs 7900	Not available
MCA, Inc.	Mortgage Management System	Complete mortgage system (9 modules also sold separately)	Data General, DEC	\$30,000- \$150,000

Continued

EXHIBIT VII-3 (Cont.)

TYPICAL MORTGAGE BANKING INFORMATION SYSTEMS  
PRODUCTS AND SERVICES

VENDOR	PRODUCT	FUNCTIONS	SYSTEM	PRICE
MIS, Inc.	MISER	Loan processing	Burroughs mainframes	\$130,000
National Financial Computer Systems	LOANStar	Origination, loan tracking, and secondary marketing	IBM PC, XT, AT, Texas Instruments AT&T PCs, Burroughs, NCR, IBM, DEC minis, Sanyo PC	\$995-\$2,995
Northridge Software	Loan Amortization and Comparison Program	Loan amortization and comparisons	Most micros	\$495
Origin, Inc.	Origin Mortgage Loan Origination System	Mortgage application processing, tracking, closing, documentation	IBM PC, compatibles	\$4,500
Professional Information Management, Inc.	LoanTrac III Processing Tracking Closing Secondary Marketing	Loan processor Loan tracking Loan closing Secondary marketing	IBM PC, XT, AT compatibles	\$3,000 \$1,000 \$3,000 \$1,000
Radix Corp.	The Closer	Complete loan processing system	IBM PC, XT, AT	Available upon request

Continued



EXHIBIT VII-3 (Cont.)

TYPICAL MORTGAGE BANKING INFORMATION SYSTEMS  
PRODUCTS AND SERVICES

VENDOR	PRODUCT	FUNCTIONS	SYSTEM	PRICE
Software Concepts, Inc.	Mortgage Preparation System	Loan origination, document preparation, loan closing, secondary marketing, loan tracking	IBM 3033, 4300, 3083	\$60,000
Software Development Corp.	Total Loan System (5 modules)	Loan tracking, document preparation, secondary marketing, construction, servicing	IBM PC, Burroughs IBM, NCR mainframes	\$5,000-\$25,000 \$30,000-\$265,000
Sound Software Marketing, Inc.	Mortgage Manager Closing Document Package	Mortgage loan software, Document preparation	IBM, NCR PCs IBM, NCR PCs	\$8,500 \$1,000
Symbolics Financial Systems, Inc.	MLC System Processing Secondary Marketing Servicing	Loan processing Secondary marketing, loan servicing	IBM PC IBM mainframes	Available upon request



- Integrated systems running on IBM, NCR, and Burroughs mainframes run in the six figures.
- The quasi-federal mortgage funding corporations, the Federal Home Loan Mortgage Company (Freddie Mac), and the Federal National Mortgage Association (Fannie Mae) are heavily involved in automating mortgage lending.
  - Freddie Mac has implemented a series of programs to process loan packages on-line utilizing a micro-mainframe link for PC-compatibles to IBM mainframes.
  - Fannie Mae has acquired FSI Inc. to develop its mortgage lending system.

#### 4. FUNDS TRANSFER

- Typical of the advanced software products available to handle integrated funds transfer is the Bank Communications Systems software developed by Keystone Computer Associates, Inc. The communications software supports SWIFT, CHIPS, FedWire, and even International Telex. The system runs on IBM-compatible mainframes using CICS and VSAM on either DOS or MVS.
  - The system provides security through password protection and encryption and will soon contain message authentication.
  - The system emphasizes on-line interactive operation and extensive message logging, backup recovery, and audability.
- A typical fail-safe mega-minicomputer-based funds transfer system is offered by Precision Business Systems (PBS).

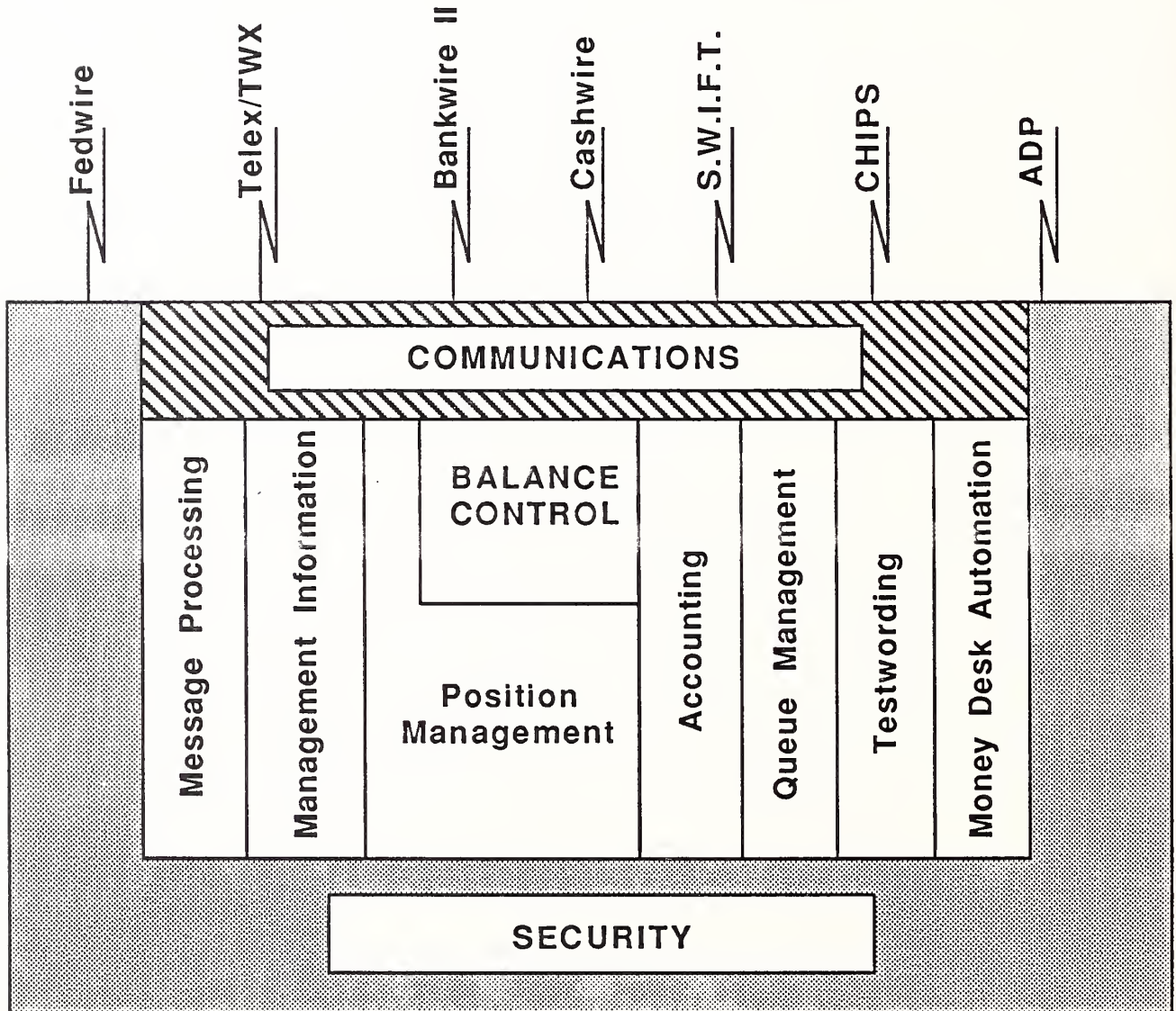
- The system, currently operating on DEC minis, is being migrated to the Stratus/IBM System 88 fault tolerant system.
- Daylight overdraft protection is an important new feature of the system.
- The communications module permits the system to interface with a wide variety of funds transfer networks, as shown in Exhibit VII-4.

## 5. CORPORATE TRUST

- It is not unusual to have the bank players involved spend in excess of \$5 million annually to upgrade master trust financial information systems. The systems are either homegrown, often using professional services vendor support (e.g., the Big Eight accounting firms) or, more frequently, the purchase and modification of trust accounting software.
- SEI Corporation is the premier firm with its Trust-Aid system.
  - Both minicomputer and IBM-compatible mainframe products are offered.
  - Remote processing services are also part of the product mix.
  - The company offers a highly successful funds custody investment and accounting service, Fund Trac, for available cash in employee benefit plans.
- Automation of master trust operations is frequently accomplished by software product vendors working with a lead bank.
  - James Meketa and Associates has developed the Horizon Trust system in conjunction with State Street Boston Corporation.

EXHIBIT VII-4

BLOCK DIAGRAM OF FUNDS TRANSFER  
INFORMATION AND COMMUNICATIONS FUNCTIONS



- The ever-growing functions include global trading, tax legislation, government and mortgage-backed securities, and options and futures.
- The system specializes in handling mutual funds.
- Mellon Bank in Pittsburg is developing an advanced on-line interactive master trust system through its recently acquired subsidiary, Bradford National Corporation.
- Master-Net, initially developed by Premier Systems for Bank of America, is highly modularized and contains over 1.5 million lines of code. The data base management system utilizes an interactive data dictionary.
- A noted example of a microprocessor-based trust-related system is Summa Software Corporation's Trade Manager.
  - The system runs on IBM PC and compatibles and Apple personal computers.
  - The three modules include Trade Data Manager, handling securities price information through both stored and financial data base vendor network services; Trader's Forecaster, which provides graphics, forecasting and technical analysis; and Trader's Accountant, which handles cash accounting, margin accounting, and data in security portfolios.

## 6. INTERNATIONAL BANKING

- Typical of software aimed at international money market operation is the International Money Management System (IMMS) from GDK Systems, Inc.

- The system operates on-line in real time handling foreign exchange, Euro currency, international loans, securities dealing, and multiple currency accounting.
  - IMMS handles multi-bank and multi-blank global positions and exposures.
  - IMMS interfaces with SWIFT, CHIPS, FedWire, and other funds transfer and clearing networks.
  - The system operates on IBM 4300 series hardware.
- Typical of mini/microprocessor-based specialized international banking software are those offered by Computer Catalysts.
    - A front-end letter of credit initiation system, CATS, operates on IBM PC/XT and above compatibles.
    - A back-end letter of credit system operates on IBM System/36 or PC/36.
    - Pricing is significant, \$60,000 for the PC/36 version and \$175,000 for the System/36 full-function system.
  - Management Technologies Incorporated offers an integrated international banking system, ManTec, operating on large IBM-compatible mainframes and priced in the six figure range. The full functionality system includes:
    - Foreign exchange.
    - Commercial loans.
    - Letters of credit.



- General ledger.
- Money market.
- Federal returns.
- Corporate DDA accounting.
- CHIPS/SWIFT/TELEX.
- American Management Systems Inc. offers an IBM mainframe-based Letter of Credit System (LCS).
  - A remote customer entry system allows entry of letter of credit applications on an IBM PC or compatible personal computer and inquiry status of letter approval and execution.
- Continuing to integrate services, SEI Corporation has added a foreign exchange module to its on-line FundTrac Securities Management and Analysis System.
  - The system provides exchange rate data, options, futures, initiation, and accounting for international financial institutions.

## 7. BUSINESS INFORMATION SERVICES

- There are literally hundreds of financial information business products and services becoming ever more available through on-line interactive access by personal computers. The two presented below are illustrative.
- HDR Systems, Inc. offers its Noah Banking Services via an advanced relational data base-oriented on-line interactive access system operating on a wide variety of personal computers, including IBM and Apple.



- Noah Banking is a marketing-oriented customer information file, permitting "what if" analysis on client relationships.
  - Noah/BankPen is a data base developed from FDIC and FHLB financial reports and is targeted toward marketing to financial institutions.
  - Noah Demographics is a demographic data base tailored to the financial services industry.
- As part of its entry into the financial information services marketplace, Security Pacific Automation Company offers Security Pacific Market Information (SPMI).
    - Information is distributed from world money markets through an SPMI satellite.
    - The system interfaces with an SPMI-supplied IBM-compatible micro-computer.
    - Local distribution is by microwaved telephone bypass communications systems.
    - A locally stored DBMS system permits retention and display of transmitted information.
    - The system provides instant quotes on world money markets.
    - An integrated electronic mail capability permits transmission to corporate offices worldwide.
    - A wide set of analysis and graphics software interacts with the relational DBMS.

## APPENDIX A: DEFINITIONS



## APPENDIX A: DEFINITIONS

### A. REVENUE

- All revenue and user expenditures reported are available (i.e., noncaptive) revenue, as defined below.
  - NONCAPTIVE INFORMATION SERVICES REVENUE - Revenue received for information services provided within the U.S. from users who are not part of the same parent corporation as the vendor.
  - CAPTIVE INFORMATION SERVICES REVENUE - Revenue received from users who are part of the same parent corporation as the vendor.
- OTHER REVENUE - Revenue derived from lines of business other than those defined above.

### B. SERVICE MODES

- PROCESSING SERVICES - Remote computing services, batch services, and processing facilities management.

REMOTE COMPUTING SERVICES (RCS) - Provision of data processing to a user by means of terminals at the user's site(s) connected by a data communications network to the vendor's central computer.

- INTERACTIVE (timesharing) - Characterized by the interaction of the user with the system, primarily for problem solving timesharing but also for data entry and transaction processing; the user is on-line to the program/files.
- REMOTE BATCH - Where the user hands over control of a job to the vendor's computer, which schedules job execution according to priorities and resource requirements.
- BATCH SERVICES - This includes data processing performed at vendors' sites of user programs and/or data that are physically transported (as opposed to electronically by telecommunications media) to and/or from those sites. Data entry and data output services, such as keypunching and computer output microfilm processing, are also included. Batch services include those expenditures by users who take their data to a vendor site that has a terminal connected to a remote computer for the actual processing.
- PROCESSING FACILITIES MANAGEMENT (PFM) (Also referred to as "resource management" or "systems management") - The management of all or a major part of a user's data processing functions under a long-term contract (more than one year). This would include both remote computing and batch services. To qualify as PFM, the contractor must directly plan, control, operate, and own the facility provided to the user, either on-site, through communications lines, or in a mixed mode.

- Processing services are further differentiated as follows:
  - Function-specific services are the processing of applications that are targeted to specific user departments (e.g, finance, personnel, sales) but cut across industry lines. Most general ledger, accounts receivable, payroll, and personnel applications fall into this category. Function-specific data base services where the vendor supplies the data base and controls access to it (although it may be owned by a third party) are included in this category. General-purpose tools such as financial planning systems, linear regression packages, and other statistical routines are also included. However, when the application, tool, or data base is designed for specific industry use, then the service is industry specific.
  - Industry-Specific services provide processing for particular functions or problems unique to an industry or industry group. The software is provided by the vendor either as a complete package or as an applications "tool" that the user employs to produce a unique solution. Specialty applications can be either business or scientific in orientation. Industry-specific data base services, where the vendor supplies the data base and controls access to it (although it may be owned by a third party) are also included under this category. Examples of industry-specific applications are seismic data processing, numerically controlled machine tool software development, and demand deposit accounting.
  - Utility services are those where the vendor provides access to a computer and/or communications network with basic software that enables users to develop their own problem solutions or processing systems. These basic tools include terminal-handling software, sorts, language compilers, data base management systems, information retrieval software, scientific library routines, and other systems software.



- TURNKEY SYSTEMS - An integration of systems and applications software with hardware, packaged as a single entity. The value added by the vendor is in both the software and integration. Most CAD/CAM systems and many small business systems are turnkey systems. This does not include specialized hardware systems such as word processors, cash registers, and process control systems.
- Turnkey systems revenue is divided into two categories:
  - INDUSTRY-SPECIFIC, i.e, systems that serve a specific function for a given industry sector such as seismic processing systems, automobile dealer parts inventory, CAD/CAM systems, and discrete manufacturing control systems.
  - CROSS-INDUSTRY systems, i.e, systems that provide a specific function that is applicable to a wide range of industry sectors such as financial planning systems, payroll systems, and personnel management systems.
- Revenue includes hardware, software, and support functions.

### C. BANKING AND FINANCE INDUSTRY TERMS

- AUDIO-RESPONSE UNIT - An audio response unit receives digital data from a processor. Part of the data activates pre-selected vocabulary. Other data (primarily numeric) is converted from digital to voice. The entire message is then transmitted on a voice line.
- AUTHENTICATE - To determine the accuracy of a user's identity or a message's certification of its time or place of origin.

- AUTOMATED CLEARINGHOUSE (ACH) - An automated clearinghouse exchanges payments between members via computer media such as magnetic tape. The ACH is formed by an association of private depository institutions. Most of the current ACHs are located on the premises of Federal Reserve Banks. The ACHs in Chicago and New York are privately operated.
- AUTOMATIC TELLER MACHINES (ATM) - Allows consumers to initiate deposits, cash withdrawals, and other transactions for their bank or S&L accounts.
- BANK CUSTOMER PROFITABILITY ANALYSIS - A statement of the activity cost in an account and the adequacy of the compensation to the bank.
- CASH MANAGEMENT SYSTEM - A group of applications that includes:
  - Information for a bank customer on balances, transactions, pending transactions, and operational products. It is gathered within the bank and from other banks.
  - General information on services and interest rates.
  - The capability of initiating transactions, particularly funds transfer.
- CHECK GUARANTEE - Check guarantee is that process by which the services vendor guarantees that uncollectable checks will be purchased at predetermined discounted value from the retailer without recourse. The vendor takes whatever action is necessary, if any, to recover funds from the consumer.
- CHECK TRUNCATION - The process whereby the movement of a paper check is stopped at the depository institution first receiving the check. Pertinent information is converted to an electronic image and processed by the payments clearance system; the customer receives a descriptive account

statement. Facsimile check copies are made available as necessary in response to inquiries.

- CHECK VERIFICATION - Check verification is a process by which the vendor advises the retailer of the likelihood that the check is good or that the check is bad based on negative data held in the vendor's data base. The retailer retains liability for uncollectable checks.
- CLEARANCE - Clearance is the process whereby retailer check deposits move from the depositing bank through a clearance bank (often the Federal Reserve) to the bank on which the check was drawn.
- CLEARING HOUSE INTER BANK PAYMENT SYSTEMS (CHIPS) - An automated clearing facility operated by the New York Clearing House Association which processes international funds transfers among its members.
- CREDIT CARD AUTHORIZATION - Credit card authorization is the process whereby the services vendor either declines authorization, approves the credit transaction within pre-prescribed limits, or obtains, as necessary, approval from the financial institution holding the credit card account. Credit card losses are borne by the participating financial institution. Provision for credit card losses are bundled in the discount rate on credit card charge amounts the merchant pays for credit card services.
- CRYPTOGRAPHY - A form of access control applicable to sensitive resources that are beyond the scope of program access control and physical access control.
- DEBIT CARD - A card that identifies the holder of a deposit account. It is generally used in conjunction with ATM or point of sale (POS) terminals and aids in the withdrawal of funds. When used with a POS terminal, the funds are then deposited from the buyer's account into the seller's account.

- ELECTRONIC CASH REGISTER (ECR) - An electronic cash register operates as a point of sale (POS) terminal with respect to credit card authorization/check guarantee. ECRs also handle sales, data capture, balancing, and inventory control.
- ELECTRONIC FUNDS TRANSFER SYSTEMS (EFTS) - Uses terminals, telecommunications, and computers to accomplish funds transfers between parties, which may be consumers, corporations, or financial service institutions.
- ENCRYPTION - A process for protecting program and data that must be stored on or transmitted over media that cannot be otherwise protected against unauthorized monitoring.
- EXHAUSTION - An attack carried out by entering all possible values (for example, of a password) and trying to supply a secret quantity unknown to the hacker.
- FINANCIAL INQUIRY SERVICES (FIS) - Provide on-line access to a wide range of security, commodity, bond, money instrument, interest rate, foreign exchange, and option price data bases directly related to activity on national exchanges. The services include the data base, remote computers, the communications network, communication controllers, and the inquiry terminals.
- GIRO - A payment system in which a bank depositor instructs his bank to transfer funds from his account directly to creditor accounts and to advise the creditors of the transfers. The depositor can specify the amount to be paid, in contrast to a preauthorized debit, which withdraws the same amount or the full amount of the bill each month.
- HACKER - An individual, usually outside a corporate organization, who attempts to gain unauthorized access to the corporate information system through random or systematic attacks.

- IMPLEMENTATION SERVICES - Implementation services are professional services delivered by professional service and software product vendors related to implementing systems and applications software products. The services are primarily for software development but may include professional consulting services.
  - Implementation services cover software product installation, support, and utilization for application development and extension.
  - Implementation services are offered directly by software product vendors and by professional services vendors in support of software product sales.
- INDIVIDUAL-BASED AUTHORIZATION - Permitting or denying access to users according to previously recorded individual authorization, with that interaction accompanying a request for access (individual rather than resource based).
- INTERCHANGE NETWORK - VISA and MasterCard operate electronic switching networks that route credit card authorization messages as necessary between processing participants and financial institutions of record.
- INVESTMENT PERFORMANCE ANALYSIS - The evaluation of investment practices relating to market performance of security holdings.
- KERNEL - A security kernel is a hardware/software mechanism that contains all security-relevant operating system functions. Implementations may contain one component, called the kernel, which enforces a specified set of security rules. Other components are called trusted processes.
- LOCK-BOX (WHOLESALE/RETAIL) - A special post office box used by a bank to receive customer payments and accelerate the collection of funds by



reducing mail and check-clearing float. Lock-boxes are usually classified as retail (high-volume, low-dollar amounts) or wholesale (low-volume, high-dollar amounts).

- MARKETING ASSISTANCE PROGRAM (MAP) - A MAP is an organization selected by the local branch office of a hardware vendor to assist in the sales and/or installation of the vendor hardware and software.
- MONEY MARKET SWEEP - A review of the balances in a group of customer accounts after the close of daily business that will automatically invest all funds above a set amount in money market funds.
- MONEY MARKET TRADING - Provides a brokerage service for use by corporations and individuals wishing to invest their excess cash in short-term money market instruments.
- NEGOTIABLE ORDER OF WITHDRAWAL (NOW) ACCOUNT - A special account that pays a rate of interest and provides check capabilities. The consumer writes a NOW draft (similar to a check) which, when countersigned by the depository institution, allows for third-party payment.
- ON-LINE - A computer system in which source data are collected through input devices that directly feed and are controlled by the computer itself, which may belong to or be located at another institution. Examples of this are the Chemlink balance reporting system and most data processing or switching facilities.
- PASSWORD - Data a user provides for purposes of authentication.
- PENETRATION - An unauthorized access that gives the hacker control of the system--a type of attack.



- POINT OF SALE (POS) TERMINAL - A terminal located at a retail outlet, such as an electronic cash register or a keypad-activated credit authorization or check guarantee terminal, for handling both authorization and transaction information.
- PROOF AND TRANSIT - Process by which MICR check amounts are encoded, batches balanced (proofed) and separated between "on us" and all others, all others sorted into demand categories, cash letters prepared for those in transit, and clearance affected through a primary bank, clearance association, or the Federal Reserve Bank (FED).
- QUERY - A request for information from a data base, specifically one for data collected from a number of records and presented as a sum, average, etc.
- REAL TIME - A word applied to systems in which data are processed as soon as they are generated. This is an ambiguous term, however, since banks use it to describe many different systems, including those that actually use batch processing. In this report, it is used in its original meaning; namely, a balance reporting system that updates the account almost as soon as a credit or debit has been processed.
- REFERENCE MONITOR - A computer system component that checks each reference from subject (users or program) to object (file, device, user, or program) to determine if the access is valid.
- RESOURCE-BASED - Permitting or denying access to users according to their ability to provide authenticating data and association with a resource request.
- SAME DAY TRANSACTION REPORTING - Provision to send details on debit and credit activity to a customer terminal periodically during the day.
- SECURITIES TRANSACTION REPORTING - The use of on-line timesharing facilities to obtain current and pending security transaction information.

- SECURITY CUSTODY ACCOUNTS - A service rendered by banks and depository institutions, usually located in metropolitan areas, whereby securities are received for safekeeping in the vault of a bank for a service fee. This service can include buying and selling of securities, collection of dividends and interest payments, transfer of ownership, and automatic credit and debit entries to the depositor's account.
- SETTLEMENT - Settlement is the process whereby credit card transactions once balanced at the retail level are entered at the depositing bank or services vendor, sorted by the institution servicing the retailer, and transmitted and net funds due each participant determined (settled).
- SHARE DRAFT ACCOUNTS - Special share accounts at credit unions. The credit union member writes a share draft which, when countersigned by the credit manager, allows for third-party payment.
- SOFTWARE EDUCATION AND TRAINING - Software education and training are professional services delivered by software product vendors and professional services vendors, including specialized education vendors.
  - The services relate directly to mainframe, mini, and micro systems and applications software products offered by software and hardware vendors.
  - Services offered are to both IS personnel and end users.
- SWITCHING FACILITY - A facility that links ATM and POS terminals to depository and credit-granting institutions to accomplish instantaneous authorizations and fund transfers. It also links and sorts the credits and debits of institutions in an ATM or POS network.

- SYSTEM INTEGRATION - System integration professional services, as delivered by professional services vendors and software product vendors, are related to integrating software products, integrating software products with hardware, and at times integrating software products with communications products.
  - System integration services are tied to commercial software products.
  - System integration services are primarily software development professional services but may include professional consulting services.
- TROJAN HORSE - A routine that does not contribute to the documented function of the program that contains it, but instead is something the program's developer would prevent if possible (a routine that takes advantage of the program's security level to effect unauthorized access).
- TRUSTED - A component that can be relied on to enforce the relevant security policy.
- VALUE-ADDED DEALER (VAD) - A VAD is a local organization that stocks, sells, and supports a hardware vendor's products, adding value by including other vendor software packages and services.
- VALUE-ADDED INTEGRATOR (VAI) - A VAI is an organization that integrates one vendor's hardware and software with other vendors' hardware and software, adding value through its own products and services and delivering, supporting, and sometimes managing the information system for the customer.
- VALUE-ADDED REMARKETER (VAR) - A VAR is a company that has national presence and that is authorized to sell a hardware vendor's hardware and software products in selective markets, adding value through software products and services.
- WIRE TRANSFERS - The electronic transfer of funds from one institution to another through the Federal Reserve Wire, BANKWIRE, or SWIFT systems.

## APPENDIX B: RELATED INPUT REPORTS



## APPENDIX B: RELATED INPUT REPORTS

- The Economics of Computer/Communications Networks and Their Future Impacts, 1976.
- Impacts of Upcoming Optical Memory Systems, 1983.
- Market Impacts of IBM's Software Strategy, 1984.
- New Professional Services Opportunities, 1985.
- Protecting the Corporate Systems and Software Investment, 1984.
- Market Update: Banking and Finance Information Services, 1984-1989, 1984.
- Check Guarantee and Credit Card Authorization Services, 1985.
- Electronic Data Exchange, 1985.
- Correspondent Bank Processing Services Markets, 1985-1990, 1985.
- U.S. Information Services Markets, 1985-1990, Volume I - Industry-Specific Markets, 1985.





## APPENDIX C: QUESTIONNAIRES



# CONFIDENTIAL

## BANKING AND FINANCIAL INFORMATION SERVICES Bank MIS/DP Executive Questionnaire

1. Is your bank in the service bureau business? Yes \_\_\_\_\_ No \_\_\_\_\_

If yes, is the business expanding? Yes \_\_\_\_\_ No \_\_\_\_\_

Please list the types of products/services offered: \_\_\_\_\_

Types of clients served: \_\_\_\_\_

2. Are you planning any joint ventures with vendors of Information Services in the next 5 years? Yes \_\_\_\_\_ No \_\_\_\_\_

Please briefly describe: \_\_\_\_\_

3. Is your bank considered to be an innovator in adopting new technology? Yes \_\_\_\_\_ No \_\_\_\_\_

If yes, why? \_\_\_\_\_

4. What criteria are used for "Make" vs. "Buy" decisions for vendor supplied products and services (check all that apply)?

( ) Complexity of Problem	Others (please list):
( ) Availability of Resources	_____
( ) Product/Vendor Reputation	_____
( ) Cost	_____
( ) Vendor Product Options	_____

5. Who makes the final make vs. buy decision (list title)?

6. Does your organization have buying preferences (check all that apply):

	<u>Comments</u>
( ) By type of service?	_____
( ) By vendor?	_____
( ) Other criteria?	_____

7. Please indicate which organization/market segments require the most Information Services vendor support (check top two)?

	<u>Explain Briefly</u>
( ) Wholesale	_____
( ) Retail	_____
( ) Bank Card	_____
( ) Trust	_____
( ) DP Services	_____
( ) Other	_____

# CONFIDENTIAL

8. Please check the new technology capabilities you consider to be most important to the achievement of your bank's goals and objectives?

Comment on Implementation Plans

<input type="checkbox"/>	Hardware	_____
<input type="checkbox"/>	Software	_____
<input type="checkbox"/>	Communications	_____
<input type="checkbox"/>	Office Systems	_____
<input type="checkbox"/>	Other _____	_____
<input type="checkbox"/>	_____	_____

9. What are the major technology issues confronting your bank today?  
Check as many as appropriate. Please add to list.

Issues	Other Issues
<input type="checkbox"/> Rapid Changes in Technology	_____
<input type="checkbox"/> Obsolescence of Software	_____
<input type="checkbox"/> Availability of Resources	_____
<input type="checkbox"/> Deregulation of Telecommunications	_____
<input type="checkbox"/> Cost of Technology	_____
<input type="checkbox"/> Programmer Productivity	_____
<input type="checkbox"/> Other _____	_____

10. For each major system category please respond as follows:

- Current or Planned (C or P)?
- High (H), Medium (M), or Low (L) development priority?
- Large (L), Medium (M), or Small (S) investment size?
- Required Product Delivery (range of years)?

Current/ Planned (C/P)	Dev. Priority (H/M/L)	Investment Size (S/M/L)	Major System Category	Timeframe (yrs)		
				1-2	3-5	6-10
			Commercial Loans			
			Demand Deposit Accounting			
			Card Products/Services			
			Trust Services			
			International Banking			
			Cash Management Services			
			EFT, ACH, POS, Wire Transfer			
			Data Processing Services			
			X.12 Electronic Business			
			Data Interchange			
			Customer Relationships			
			MIS, CIF, Special Data Bases			
			Elec. Banking, ATM, POS			
			Data Security			
			Distributed Data Processing			
			Office Automation Systems			
			Personal Computers			
			DC Networks			
			Other: _____			

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11. a. What is your total DP/IS budget for 1985? \$ \_\_\_\_\_ MIL
- b. What is the average annual growth rate expected for this budget during the 1986-1990 timeframe? \_\_\_\_\_ %

12. a. What percentage of your total budget was paid to Information Service Vendors in 1985? \_\_\_\_\_ %
- b. What percentage do you expect to pay to these vendors during 1986-1990 (average)? \_\_\_\_\_ %

13. Estimate your distribution of expenses for vendor-supplied services in 1985 and for the period 1986-1990.

	<u>1985</u>	<u>1986-1990</u>
Software	_____ %	_____ %
DP	_____ %	_____ %
Turnkey Systems	_____ %	_____ %
Professional Services	_____ %	_____ %
Proprietary Data Bases	_____ %	_____ %
Communications & Networks	_____ %	_____ %
Facilities Management	_____ %	_____ %
Card-Related Services	_____ %	_____ %
Other _____	_____ %	_____ %
	100%	100%

14. Estimate your IS budget allocation among the following major market segments/organizational units for 1985 and for 1986-1990 (average).

	<u>1985</u>	<u>1986-1990</u>
Wholesale (Corporations)	_____ %	_____ %
Retail (Individuals)	_____ %	_____ %
Card Products & Services	_____ %	_____ %
Trust	_____ %	_____ %
International Banking	_____ %	_____ %
Administrative Systems	_____ %	_____ %
Business Services	_____ %	_____ %
Other _____	_____ %	_____ %
	100%	100%

15. Please comment on significant trends in banking and information services (i.e., distributed data processing, local area networks, Information Center, Service Bureaus and Personal Computers, etc.):

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16. Any additional comments? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Please complete the following so we may send you a copy of the Executive Overview at your correct address.

Name _____	Bank Information:
Title - Department _____	1985 Assets \$ _____ mil
Organization/Bank _____	Deposits \$ _____ mil
Street or P.O. Box _____	Branches _____
City, State, Zip _____	Employees _____
Telephone (____) _____	

Thanks for your participation.

# CONFIDENTIAL

## BANKING AND FINANCIAL INFORMATION SERVICES - "The Next Decade" Bank Marketing/Planning Executive Questionnaire

1. Please indicate what new products are currently being developed or are planned and your estimated relative priority of importance for each?

		Scheduled Development (check one)		Development Priority (check one)		
		Current	Planned	High	Medium	Low
<b>A. Wholesale Market Segment</b>						
1.	Large-Corporate ( <b>more than \$100 million in sales</b> )					
	a. Cash Management Services					
	b. Treasury Workstation					
	c. Others _____					
2.	Middle Market (\$20-100 million in sales)					
	a. Cash Management Services					
	b. Loan Products					
	c. Others _____					
3.	Small Companies (\$1-20 million in sales)					
	a. Line of Credit					
	b. Others _____					
4.	Electronic Banking					
	a. EFT					
	b. ACH					
	c. Corporate Trade Payments					
	d. Others _____					
<b>B. Retail Market Segment</b>						
1.	Mass Market					
	a. New Checking/Savings					
	b. Others _____					
2.	Upscale Individuals					
	a. Financial Planning					
	b. Checking Product					
	c. Others _____					
3.	Electronic Banking					
	a. ATM Service					
	b. POS - Debit Card					
	c. Home Banking					
	d. ACH					
	e. Others _____					

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	Scheduled Development (check one)		Development Priority (check one)		
	Current	Planned	High	Medium	Low
C. Bank Card					
1. Premium Card					
2. Others _____					
D. Trust					
1. Tax Preparation					
2. Investment Options					
3. Others _____					
E. International Banking					
1. Cash Management					
2. Others _____					
F. DP Services					
1. Office Automation					
2. Distributed Data Processing					
3. Networking					
4. Others _____					
G. Other _____					
_____					

2. Please indicate what you perceive as "threats" in each of the following market segments (check those that apply):

<p>A. Wholesale</p> <p>    ( ) New Competitors</p> <p>    ( ) Interstate Banking</p> <p>    ( ) Other _____</p> <p>    ( ) Other _____</p> <p>B. Retail</p> <p>    ( ) Interstate Banking</p> <p>    ( ) Consumer Knowledge</p> <p>    ( ) Other _____</p> <p>C. Bank Card</p> <p>    ( ) _____</p> <p>    ( ) _____</p> <p>    ( ) _____</p> <p>    ( ) _____</p> <p>    ( ) _____</p>	<p>D. Trust/Investment</p> <p>    ( ) _____</p> <p>    ( ) _____</p> <p>    ( ) _____</p> <p>    ( ) _____</p> <p>E. International Banking</p> <p>    ( ) Foreign Competition</p> <p>        Competition</p> <p>    ( ) Other _____</p> <p>F. DP Services</p> <p>    ( ) _____</p> <p>    ( ) _____</p> <p>G. Other</p> <p>    ( ) _____</p> <p>    ( ) _____</p>
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3. A. Please indicate what group you consider to be your major competitors for each market segment listed below (check all that apply):

Markets	Competitors						
	Major Banks	Retail-ers	S&L's	Non-Bank Banks	Credit Unions	Local Banks	Other
1. Wholesale							
2. Retail							
3. Bank Card							
4. Trust							
5. International							
6. DP Services							
7. Other							

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B. Please list your TOP 3 competitors and the competitive area:

Competitor

Area

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

4. Are you currently planning any new IS based products:

a. to counter competition? Yes\_\_\_ No\_\_\_ Explain \_\_\_\_\_

b. to provide competitive superiority? Yes\_\_\_ No\_\_\_ Explain \_\_\_\_\_

c. to establish competitive barriers? Yes\_\_\_ No\_\_\_ Explain \_\_\_\_\_

5. Please rate the impact on each market segment due to technology, competition, and business environment (i.e., deregulation, social and economic change). Indicate H=High, M=Medium L=Low

Market Segment	Forces of Change		
	Technology	Competition	Bus. Environ.
a. Wholesale Banking			
b. Retail Banking			
c. Card Products			
d. Trust Service			
e. International Banking			
f. Data Processing Services			
g. Others _____			

6. Listed below are anticipated industry events that may have an impact on your organization. Please rate the expected impact of these events on your firm; please list and rate any others that you anticipate.

	Impact Level (Check One)		
	High	Medium	Low
a. Deregulation of the Industry			
b. Intrastate Banking			
c. New Competitors (e.g. Non Bank Banks, Retailers, etc.)			
d. Consumer knowledge of Financial Services			
e. Economy, Inflation, Interest Rates			
f. Decreasing Cost of Technology			
g. Others _____			
h. _____			
i. _____			

7. How does your bank rate the overall importance of technology to the achievement of business goals (scale of 1-10, 10=highest rating)? \_\_\_\_\_

## CONFIDENTIAL

8. What do you think are the major issues and new directions facing the financial services industry with respect to information services?

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Any additional comments? \_\_\_\_\_

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Please complete the following so we may send the Executive Summary of our report to your correct address.

Name _____	Bank Information:
Title - Department _____	1985 Assets \$ _____ mil
Organization/Bank _____	Deposits \$ _____ mil
Street or P.O. Box _____	Branches _____
City, State, Zip _____	Employees _____
Telephone (____) _____	

Thanks for your participation.

QUESTIONNAIRE FOR CORPORATE FINANCIAL EXECUTIVES  
BANKING AND FINANCIAL SERVICES: THE NEXT DECADE

1. Do banks, other financial institution and vendors provide your corporation with automated information services such as: (Interviewer - indicate service provider type and rate service quality, 1 = low, 10 = high).

☐ None

	<u>Service Type (B, CFI, IS)</u>	<u>Service Quality</u>	<u>Importance Rating</u>
Delivery of account balance and transaction detail information on a terminal or personal computer	_____	_____	_____
Ability to initiate funds transfer foreign exchange, letters of credit or other transactions	_____	_____	_____
Automatic funds concentration or movement	_____	_____	_____
Automated lockbox	_____	_____	_____
Corporate trade payments	_____	_____	_____
Preauthorized payments from individuals	_____	_____	_____
Automated disbursements	_____	_____	_____
On-line information on interest or foreign exchange rates of investment alternatives (state which)	_____	_____	_____
On-line information on custody accounts	_____	_____	_____
International Banking	_____	_____	_____
Applications			
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____



2. What other services of this kind are provided to your corporation?  
Describe.

☐ None

Importance  
Rating


3. Please rate the importance of the services which you use listed in questions 1, and 2 on a 1-10 basis, where 1 = low and 10 = high. (Interviewer, read the "yes" items from question 1, then the answers from question 2 and enter a value from 1 to 10 beside each of these.

4. Could you tell us what your expenditures were from these types of services in 1984?

Expenditures in 1984 \$ \_\_\_\_\_ Budget for 1985 \$ \_\_\_\_\_

☐ Don't Know

5. What is your estimate of the average annual growth rate for this type of service for 1985 to 1989?

1985 \_\_\_\_\_%      1986 \_\_\_\_\_%      1990 \_\_\_\_\_%

☐ Don't Know

6. What additional information services should banks and other financial services offer? (Importance of need rating: 1 = low to 10 = high).

<u>Service/Explain Reason for Need</u>	<u>Importance of Need Rating</u>

7. Do you think banks or other services providers should add or increase any of the following features? ☐ Don't Know/No Comment

<u>Feature or Capability</u>	<u>Importance Rating 10 = High 1 = Low</u>	<u>Justification/ Reason</u>
More terminal or PC oriented services to save time or phone calls	_____	_____ _____ _____ _____
More user friendly messages or aids on PC terminal services	_____	_____ _____ _____ _____
Decision support capabilities to help customers make decisions on PC or terminal services	_____	_____ _____ _____ _____
More alternatives to aid investment from PCs or terminals	_____	_____ _____ _____ _____
Merchant banking	_____	_____ _____ _____ _____

(Continued)

Feature or Capability	Importance Rating 10 = High 1 = Low	Justification/ Reason
More rapid means of initiating credit	_____	_____ _____ _____ _____
Improved timeliness of information	_____	_____ _____ _____ _____
Improved company/bank data interface to company DP systems	_____	_____ _____ _____ _____
Provide access to more and a broader array of information	_____	_____ _____ _____ _____
Data Security		
Funds Transfer	_____	_____
Privacy of Information	_____	_____
Other _____	_____	_____
_____		_____
		_____
		_____
Comments _____		
_____		
_____		

8. What types of institutions do you prefer to obtain financially related services from? Please rate each of the following alternatives. Rating: 1 = Low to 10 = High. (Interviewer review items covered under question 7 and record under preferred institution type below and note reason for preferences).

☐ No Preference

<u>Institution Type</u>	<u>Rating</u>	<u>Reason for Preference</u>
Large money center commercial banks	_____	_____ _____ _____ _____
Regional commercial banks	_____	_____ _____ _____ _____
Any commercial bank	_____	_____ _____ _____ _____
Other financial institution	_____	_____ _____ _____ _____
Information services vendor joint venture (bank/IS)	_____	_____ _____ _____ _____

(Continued)

IS Joint Venture

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Other

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Comments

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9. How do you prefer to pay for these types of services?

☐ No Preference

<u>Method</u>	<u>Preference</u> 10 = High, 1 = Low
Fees	_____
Compensating balance at bank	_____
Price bundled with other services (package price)	_____
Other _____	_____
_____	

10. Would you pay for:

- ☐ More services
- ☐ More information
- ☐ Improvements
- ☐ More accurate data
- ☐ More support
- ☐ More timely data

11. Do you expect to have more on-line interaction with your banks and financial institutions in the future (2 - 5 years)?

☐ No

Describe what you expect. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

12. What problems with financially based information services are most significant to you?

<u>Problem (Please Describe)</u>	<u>What Is Potential Solution?</u>	<u>Significance Rating</u>
Data Security		

13. Please rate your satisfaction with contact and support personnel who handle banking or financial information services. (Rating: 1 = low to 10 = high).

	<u>Marketing Contact</u>	<u>Support Contact</u>
Knowledge of services		
Ability to solve problems		
Responsiveness		
Training Methods		
Willingness to handle special requests		
Contact "sales" methods		
Other (please describe)		

14. What products or services do you need that are not currently available?

Please explain. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Thank You!

## VENDOR QUESTIONNAIRE

1. Do you offer computer services/software products to the following organizations:

	<u>PROCESSING SERVICES</u>	<u>SOFTWARE PRODUCTS</u>	<u>INTEGRATED SYSTEMS</u>
<u>Commercial Banks</u>			
Retail (Consumer)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wholesale (Corporate)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trust Services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Information/DP Services (Payroll, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Funds Transfer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Financial Management and Planning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Credit Card Processing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
International	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (name) _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>Savings and Loans</u>			
Savings and Loan Processing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Financial Management and Planning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (name) _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>Credit Unions</u>			
Account Processing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Share Draft Accounting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (name) _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

PROCESSING SERVICES	SOFTWARE PRODUCTS	INTEGRATED SYSTEMS
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## 1. (Continued)

Credit Agencies

Personal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Commercial	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
General Accounting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Financial Management and Planning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (name) _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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Security and Commodity Brokers

General Accounting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stock Quotation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Financial Management and Planning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (name) _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Holding and Investment Companies

General Accounting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Financial Management and Planning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Economic Forecasting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (name) _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. What are your best estimates of the revenues you derive from the markets you serve? ☐ <\$1M ☐ \$1-5M ☐ \$5-20M ☐ >\$20M \_\_\_\_\_

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3. What is your best estimate of the share of each of the markets you serve? ☐ <10% ☐ 10-30% ☐ >30% \_\_\_\_\_

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4. What are your overall plans with respect to growth over the next 1-3 years?

Targetted Growth Rate/Year

☐ None ☐ 0-10% ☐ 10-15% ☐ 15-25% ☐ 25-50% ☐ >75%

Comments \_\_\_\_\_

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☐ Acquisition Strategies

☐ None

Comments \_\_\_\_\_

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☐ Joint Venture Strategies

☐ None

Comments \_\_\_\_\_

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5. What type of services do you offer through commercial banks or other financial institutions?

☐ None

Through

☐ Commercial Banks      ☐ S & L      ☐ Credit Unions  
☐ Security and Commodity Firms      ☐ Finance Companies  
☐ Mortgage Bankers      ☐ Investment Bankers  
☐ Other \_\_\_\_\_

Type of Service

☐ Software Products

Comments \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

☐ Processing Services

Comments \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

☐ Network Services

☐ ATM      ☐ POS      ☐ Other \_\_\_\_\_

Comments \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

☐ Facilities Management

Comments \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

6. Who are your major (3-4) competitors, and how do they rank in each of the markets you serve?

COMPETITOR	MARKET	RANK	COMMENTS

7. Who are the buyers/users of the services/products you offer (titles, functions)?

Buyers: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Users: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

8. What types of hardware do you offer in conjunction with your service?

☐ None

☐ Intelligent terminals/micro-based workstations

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☐ Personal Computer (DEC, IBM, Apple, H-P) \_\_\_\_\_ (Circle))

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9. To what extent is technology affecting your markets or delivery system?

☐ Personal Computers    ☐ Optical Storage    ☐ Telecommunications

☐ Pricing

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10. What are the major factors you see impacting the market for computer services over the next 3 - 5 years?

MARKET SEGMENT	FACTORS
1.	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
2.	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
3.	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/>

11. Which, if any, of your products/services is/are offered as integrated systems?

☐ None      ☐ Personal Computers

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12. What do you see as the role of the PC in altering banking and finance information services?

Rating : 1 to 10, where 1 = unimportant, 10 = extremely important.

☐ 1985 \_\_\_\_\_

☐ 1990 \_\_\_\_\_

☐ 1995 \_\_\_\_\_

☐ Plans

☐ None

☐ Current Offerings

Comments \_\_\_\_\_

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☐ Future Offerings

Comments \_\_\_\_\_

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13. What are your plans, if any to provide products/services to support international banking and financial networks?

☐ None

Importance (Rating: 1 to 10, where 1 = unimportant, 10 = extremely important).

☐ 1985 \_\_\_\_\_

☐ 1990 \_\_\_\_\_

☐ 1995 \_\_\_\_\_

Comments \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

14. How important will this distributed processing be in banking and finance markets over the next decade?

(Rating: 1 to 10, where 1 = unimportant, 10 = extremely important).

☐ 1985 \_\_\_\_\_

☐ 1990 \_\_\_\_\_

☐ 1995 \_\_\_\_\_

Plans to Provide

☐ Mainframe to Micro

☐ Micro to Mainframe

☐ Other \_\_\_\_\_

Comments \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



15. What do you consider the importance of information security with respect to your product services offerings?

Rating: 1 to 10, where 1 = unimportant, 10 = extremely important)

☐ 1985 \_\_\_\_\_

☐ 1990 \_\_\_\_\_

☐ 1995 \_\_\_\_\_

☐ Plans to Provide

☐ None

Comments \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

16. Available literature being sent?

☐ Yes      ☐ No

Thank You!







